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mark made by the butt of the gun in the snow. He judged the dog was small by the size of the tracks, and by the mark he made where he seated himself near the gun; here too he saw that he had a short tail

I do not know that either of these tales is exactly true, though it is certain that something like them has often happened, and I think they contain good hints for us, as they show much we can get to know when we make good use of our senses. We have many helps to assist us in getting knowledge, which neither the camel driver nor the Indian had, and it is well for us that we have, but if we were to use all our aids as carefully as they did theirs, how knowing we should be. We must not think that because we have books and other things which these men had not, to help them in getting knowledge, that we need not make much use of our senses; the books may be wrong, and may lead us wrong if we do not use our own eyes, ears, fingers &c. to prove whether what we find in them be true.

Change of Temper.

A. What makes you look so smiling this morning? I am sure if you were in my place, you would have a very different appearance.

B. Has any thing unpleasant happened to you, which makes you say so?

A. Nothing more than happens every day, I have been scolded twenty times this morning by my mother, had some frowning from my father, and though the rest of the family said nothing, they all looked as if they did not like me; I believe every body is my enemy.

B. If that is really the case your situation must be a very unhappy one, but I cannot believe it is, for yesterday when your mother was at our house I overheard her tell mine that she had not a more affectionate child than you, or one that she loved better.

A. She must have loved too fast yesterday, for I suspect she has very little left for to-day; if she has, she has a strange way of showing it. She told me this morning

that my temper was insupportable, and that she has more trouble on my account than with all the rest of her children. Do you think that looks much like being a favourite with her.

B. I should not suppose your mother wishes to have a favorite among her children, but I can see how she can love you and say what she said; she told my mother that you had a difficult temper which had given her great concern, and she expressed her fears that unless you could govern it, it might prevent you from being happy through life. I observed her wiping her eyes after she said this, and if I had not gone away, mine would soon have wanted wiping. I suppose I know the reason why you thought I looked pleased, for as soon as I saw you, I thought of your kind mother.

A. I could endure my mother's censure, for though it is hard at the time it is soon over, but my father is not so easily reconciled; I should not wonder if he keeps me at a distance the whole day; he says very little, yet there is something in his displeasure which keeps me thinking about it until he takes me into favour again, and I take notice that this seldom happens until I come to the conclusion that he had reason to be dissatisfied with me. I have often been anxious to know how this is, for I never tell him when I come to such a conclusion.

B. There are other ways of telling when we perceive we have done wrong, besides the use of words; it may be seen in our countenances, and in our actions, and your father is a very likely person to observe both.

A. My mother became kind to me before I perceive my error; indeed it is often her kind treatment which makes me examine whether I gave her occasion to be otherwise, and it mostly happens that I see I was wrong; but I have no recollection that my father ever looked pleasantly until I felt that I had given him cause to disapprove me.

B. It is not so with my parents; I dread my mother's displeasure much more than my father's; he seldom censures me though he sometimes tells me I have made my

...other unhappy, and requests me to acknowledge my errors to her as soon as I feel sensible of them. But I believe that mothers generally, are the most indulgent.

A. Both my parents are very good to me, and I love them dearly, but sometimes they will not consent that I shall do things which I think are very proper. The cause of my unhappiness this morning, is their unwillingness that I should study mensuration, and you know all the boys in my class are at it. Now how will it look for me alone to neglect it?

B. What reasons do they give for opposing you.

A. Why my father says in the first place that he spent six months at mensuration, that he has since had use for but little of it, and that little he had to learn over in a more practical way; secondly he fears that I am studying too many branches at once; that they will confuse my ideas, so that I will understand none of them well; he'd like me to give the greater part of my attention to moral, and natural philosophy, and in this my mother joins with him.

B. Your father has a chance to be mistaken; does he say that mensuration is not useful?

A. No: but he says when I am older he can instruct me in a very short time, in a very simple way, how to measure the greater part of bodies whose contents it is necessary to know, and that I will understand the reasons perfectly.

B. There may be something in that. Whether it be that I ought to have known something else before I went at it, or that was not rightly explained to me I do not know, but I understand very little of what the author. I am not at all sure that I have not been hindered by having several things on hand at the same time. I know that if we should have a grammar lesson this morning and geography the next morning more than once when I have gone to recite, it required me to recollect which I had to learn. I believe it would be best for me to learn one thing at a time; it may suit several persons to learn several

It suits me much the best, to study one

thing at a time I know, but then one does not like to be behind one's class mates. On examinations and drillings, when visitors are in the school, it makes one feel so awkward to be passed over.

B. I know that, but I am thinking that examinations and drillings only last while we go to school, and that we want clear heads and sound knowledge all our lives after. I cannot tell whether your parents are right in wishing you to give the most of your attention to moral and natural philosophy, but this I do know that I understand them better, am more pleased with them, and so far, have more use for them when I am out of school, than any of my other studies; whether it will be so after a while, I cannot tell.

A. It is exactly so with me; I could wish they were the business of the school; as they are not, I do not like to be confined to them; but I think it likely I am wrong, and that it would be better to get rid of my class-pride. But I am staying too long. I feel much happier than when we met. Good morning.

B. Good morning, and tell me next time we meet whether your father "kept you at a distance all day," or your mother had spent all her affection; I think I can guess pretty nearly how it will be, but still I should like you to inform me.

A. Why do you smile? I suppose you think I shall go home, in a better humour than I came.

GEOGRAPHY.

It is not very long since it was believed that the earth was a flat plain; one Galileo found out that it is round—he told his opinion, and the priests of his country tried him for it, and would have imprisoned and probably killed him, but to save himself, he recanted, or said he was mistaken. Since that time Newton, Ferguson, and others have proved, not only that it is round, but that it turns round once every 24 hours, and that the sun does not move round us every day, but that the earth moves around it once in a year. That the earth is round, is proven in several ways, first an eclipse of the moon is caused by the earth coming

between the sun and moon—of course it prevents the light of the sun from coming to the moon, either in part or altogether, this is the earth's shadow on the moon, and it always is of the shape that a round body makes, that is, the edge of the eclipse or shadow is always round. Now if it was any other shape than round, the shadow would not be round, for everything makes a shadow of its own shape, this can be tried with a three square, a four square and a round block, held before a candle, the shadow will be of the same shape as the block, and it is a shadow or eclipse of the place or thing it falls upon. Again, if two ships are sailing on the sea the first thing each sees of the other is the top of the mast or pole; this appears to grow longer and longer, until the body of the vessel comes in sight, this is caused by the round shape of the water, if it were flat or straight the body of the vessel would be seen before the masts, because it is larger. This being the shape of the world, as there are people living on different sides of it, it is easy to see that they do not stand parallel to each other, that is that their heads do not all point the same way. If we stick a pin where the stem of an apple grew; another in the eye, and a number in other parts of the apple, with the points all running towards the centre, or middle, then will the heads point in different directions, exactly as the heads of the people on our world do. Now as the sun does not move, and the earth turns round once in a day and night, this causes all the people near the middle of the earth to see the sun rise and set every 24 hours; but they do not see either, at the same time, for it is plain that at the time the sun is setting to the people on one side, it is rising to those on the opposite side; and that the midnight of one people, is the noon of their antipodes or opposite people. It seems strange to some and they can scarcely believe it true, that there are people living below them as they call it, which is the same thing, as they themselves were, twelve hours ago, and will again be in twelve hours in the same situation, they cannot understand how any creature should stick to the under side of a ball; they come to this conclusion because they have seen that though a grain of wheat, or corn will lay on the upper, side of an apple, or any round body, it will not lay on the under side; but the cases are not alike, the apple or ball is itself a part of the system of the earth and will be on it, or on something that is on it on whatever side it may be, the earth does not thus belong to, or is not thus a part, of any other thing; there is in it a property, or principle called the attraction of gravitation, which makes all parts of it draw or incline equally to the centre. We do not understand what this principle or power is, or how it operates; but we do know the fact that at equal distances from the centre, the same thing is equally heavy, or gravitates with equal force. In studying geography, we should always think of the place where we are, first, and then of other places, as they are situated in relation to or around it, we should always think of them as they are, before, behind, or at one side of us, we should also think of them, as they would be to us, if we were at some other place which we know of; and we should always study maps, and think of the places around us with our faces to the north, that is with our backs to the south, where the sun is at noon; then, sun rise, or east will be on our right hand, and sun set or west, on our left.

A map of the world is two rings called the eastern and western hemispheres, or halves of the world, each containing the countries and seas that lie in it; both these hemispheres have straight lines running across them from right to left; this is called the equator; every place lying above this line, is in north latitude; all places below it, are in south latitude; from the line to either end of the earth (called the poles,) in any direction, is divided into 90 equal parts, called degrees, and every place is in as many degrees of latitude, north or south, as it is of those parts from the equator north or south; one of those degrees is nearly 70 miles, so that if we find the latitude of any place and multiply

it by 70, we shall have the distance of that place from the equator; or if we find the number of parts, or degrees, between two places, and multiply them by 70, we shall have the distance between those two places. There are other lines that run from right to left though none of them are straight, and they become more crooked as they are near the poles—these are called parallels of latitude, because they are parallel, or run the same way, with the equator they are ten degrees apart. There are two, one on either side of the equator, and $23\frac{1}{2}$ degrees from it; they are called the tropics, that on the north is the tropic of cancer—that on the south Capricorn.

Between these two circles there are 47 degrees of a belt all around the earth, called the torrid zone on account of its heat; all the inhabitants of this zone, have the sun shining on the top of their heads at some season of the year; this happens only at 12 o'clock, when they have no shadow, and is under their feet. $23\frac{1}{2}$ degrees from either pole, is another circle called polar circles, that on the north is the Arctic, that on the south the Antarctic. Between each of these, and the tropics, is a belt or ring containing 43 degrees and they are named the temperate zones, because the weather in them is not so hot as within the tropics, nor so cold as without the polar circles; the longest day in the torrid zone is 36h. 30m. of course the longest night is no more; whereas, the longest day in the temperate zone is 1 month, which must be the length of their longest night. Beyond the polar circles it is extremely cold; no lives or very few live there; they are called the frigid or frozen zones; at the poles they have 6 months day and the same of night; when it is day at one, it is night at the other.

Longitude is the number of degrees that lie between two places from east to west. Degrees of longitude are equal to one of time, that is, if one place be 15 degrees of longitude farther west than another, the first will have its sun rise, noon, and sun set, each an hour later than the second. London and Philadelphia, are 75

degrees of longitude apart; 15 can be taken out of 75, 5 times, so there is 5 hours of difference between the time of the two places, that is, when it is noon at Philadelphia, it is 5 o'clock in the evening at London.

In studying geography we should learn some facts about the history of places; we should know something of their government, their customs or manners that are remarkable; or something of the great, or good men who have lived there. If we do not, we shall soon forget what we learn; and besides, it would not be useful to know that a country, a town, or a river was in such a place, if we knew nothing more about it; this would only be learning names.

The boys and their cakes.

A certain book contains an account of three boys, Henry, Peter, and William, who acted differently with cakes that were given to them. Henry, though he was a good boy, and so fond of learning that he got to be first in his class, did not manage well with a nice cake his mother baked him, because he learned and behaved so well. The raisins, orange peel, and sugar, which she put in it, made it taste so fine, that with eating before he went into school at noon, and after he came out in the evening, he became very sick in the night. The doctor was brought, and Henry had to take more ill tasted medicine than he liked before he got well again.

Peter was a good boy too, but he was not like Henry; he was careful and saving. When his mother sent him a cake, he put it in a box and once a day he went to the box and ate a little of it; he kept it so long that the mice ate part of it, and the rest had to be thrown away because it was mouldy.

William had a mother too, who was kind enough to send him a cake; but he did not do like Henry or Peter, for he called his school-mates together, and divided the greater part of it among them; the rest he put away to give to them at another time; but soon after a blind man came

along who sat down on a stone and began to play on his fiddle for the scholars. William saw that the tears were rolling down his cheeks while he played, and he asked him why he cried. The poor man told him it was because he was hungry, and had nothing to eat; he said he would work to make a living, but could not for want of his eye sight. William thought of the part of his rich cake that was left—ran to get it, and gave it all to the poor hungry blind man. Any one may know that the little boy must have felt happy to think he had fed a poor old man who had nothing to eat.

We do not always think of the best way, until we have done some way which is not so good, or learned of some one who has made a mistake; either of these makes us more careful. It may be that Henry never thought whether the cake would make him sick, and that Peter never thought whether his cake would get mouldy, and it is not likely either of them thought how clever it would be to divide with their school-mates, or to lay some by for a hungry person who might come along, but when they saw how William did, I should not wonder if they would think of all this, and do differently the next time. This is called getting knowledge by experience.

Review.

Perhaps young readers will expect that being myself a school teacher, and having undertaken to furnish them with a paper suited to their wants, that I shall tell them which are in my opinion, the most useful books, and what are the other aids which I know of to assist them in getting useful knowledge. I should be very glad to have it in my power to recommend a greater quantity, of a better quality, than those I have seen;—there may be many that I know nothing of, and therefore cannot speak of. I have not lived much among the wise friends of youth, and unfortunately have not much acquaintance with them. I wish it were otherwise, that I might have their advice.

For beginners, I think the "Symbolical

Primer," by E. Hazen, and the "Child's Primer," by J. Lamb are suitable. Any books that have the pictures of the *things* of which the words to be spelled are the *names*, are very proper for children. They would not be so if every letter had always the same sound, but this is so far from being the case, that learners can hardly believe the letters spell some words, even when they have the pictures before them to look at. What child would know that A x e spelt the name of the thing we chop with, unless he learnt it from some person or sees the picture? The first lessons should be made as easy as possible for learners, that they may know they can learn something from the first.

There is a work called the "Pestalozzian Primer," by Dr. J. M. Keagy which though not much in use, that I know of, ought to be, on account of its simple reading lessons. The author of this little book thinks children can *read* short easy words earlier than they can *spell* long difficult ones, and that they will take a livelier interest in reading than spelling. In all this and more, I agree with him, and I would be pleased if every school had the Pestalozzian Primer, or something like it, for beginners. Perhaps Dr. Keagy would have a new edition struck off if there was a demand.

There is a contrivance called a "Spelling Puzzle," which has twenty words on a card, and a number of single letters on pasteboard; by taking up these single letters and laying them on the first letters of the words on the card, above 250 words can be spelled. This may be made very amusing, and I think five or six small children sitting around the "Puzzle" would learn to spell fast; they would help each other and puzzle each other too; they might like it better sometimes than play, or they might make play of it by seeing who could spell the greatest number of words.

There is an excellent book called the "Mothers Manual" by the Rev. M. M. Carl of Philadelphia. Any one who knows what would be of use to children will say that the Mothers' Manual ought to be in every family, and in every school where

there are young children. The parents and the teachers should have it to ask questions from, and the children should read it if they can read, and ask each other questions; they might get to know things in this way, which many grown people are ignorant of. This little book invites them to examine things which they never thought of looking at before, and they would find them very curious; they will perceive that some things which they thought were alike, are quite different, and others alike in some things which they thought were entirely different. I shall hereafter make some extracts from this little work.

"Holbrooks' infant school apparatus" is a collection of articles of great use in getting some kinds of knowledge; no good school should be without something of this kind, but as the sett costs 10 dollars, there are many families which could not afford to have it; if a handy man could see a sett, he could make several of the articles in a plain way which might do as well as Holbrook's neat ones. I shall describe them, and some other things for shewing and explaining, at another time.

If parents and teachers, or young people, if they can write, will write what information they want, if I can, I will give it to them in the Inciter; they must take notice however, that I shall never see what they write unless the postage is paid.

Right Teaching.

Very much depends on knowing how to do things rightly.

Many people who have useful knowledge, and who can speak of it very agreeably to others who have it too, are not of as much use to those who wish to get the same kind of knowledge, as some others are who have less of it, but who can speak about what they have, in a way better suited to the learner. One great difference between the two kinds of instructors is owing to the words they use. A good teacher makes himself sure that the learner understands every word which is of importance. But the greatest difference between instructors

will be found in the faculty of introducing the subject in such way as is suited to the capacity of the learner. In this Pestalozzi was before other men; he did not take the same method, or rather he did not begin at the same place with all his pupils. His first care was to discover some clear ideas that was in the pupil's mind already, that is, to find out what he knew, and how he knew it, about the subject he was instructing him in; this was his starting point with each scholar, and he never led the mind away from this point faster, or further, than he perceived the scholar could understand; by this means he always had his pupils *thinking in connexion with something they knew*. This is the reason why a boy who has just gone through the rule of three, or any thing else which he understands very well, can be of more service to his school fellow who is just beginning it, than the teacher can; their minds are nearer of a size; he can feel better than the teacher, what are his schoolmate's difficulties, and find out better too, what clear ideas he has already.

I saw a remarkable instance of good teaching, in the past winter, at the house of a friend of mine with whom I was engaged in conversation, one of his sons perhaps ten or twelve years of age, who sat with his slate in his hand, beside, or rather behind me, tipped the wink to his little sister, to come to him; she was probably five or six years of age.

He made the figure 1 on the slate and asked her if she knew what that was, she told him; he then made 2, and so on to 9, the names of all which she knew and pronounced as he made them. When he put down 10 she said "That is a one and a nought." He asked her if she knew no name for the two together. She did not. He then went on from ten to twenty, telling her the names of each pair, always rubbing them out when he had done with them. When he came to 21 and asked her the name she did as with the first pair, named the figures separately. He told her that was *two-ty* or twenty-one; he pronounced the *two-ty* several times with em-

phasis, and I saw by the little girl's animation, that she was about to get a new idea in connexion with those she had before. Next 32 appeared on the slate; she was agitated, she had only just received the new idea, and could not apply it; at the right time he relieved the anxiety he had excited by telling her that it was *three-ty, thirty two*; this was enough; she named 43 64 and so on, as he put them down.

I had an opportunity of observing all this, without the knowledge of the young teacher or his young pupil, who were both so busily engaged with their own business, and when the lesson was over, (and he stopped at the right time before her interest had abated) I had to acknowledge to myself, that I had never had so good instructions in arithmetic, and that I had never known how to teach enumeration.

Comparing.

C. How do you spend your time now?

D. I am going to the new schoolmaster.

C. What are you learning?

D. Reading, writing and cyphering.

C. What books do you read.

D. The English Reader, the Sequel, and the American Preceptor.

C. Can you read well?

D. Yes; I am head in the first class.

C. Do you understand what you read?

D. The master has to tell me a few words.

C. I do not mean that: do you know what you are reading about?

D. Sometimes I do a little; and I think I should more if there were not so many hard words. There are some books in school which I understand very well, but I am ashamed to read aloud in them; they are made for little children, and when I read in them it appears just like talking.

C. And what do you think reading is but talking out of a book?

D. Do you mean all reading?

C. Yes.

D. Why some is history, some geography, and there are few things which seem to me like talking. Surely you don't think

that the rules of grammar and arithmetic are talking?

C. I do indeed. History is only an account of what has happened somewhere, at some time. The persons who saw those things could only tell them to the people they lived amongst, and if they had not written them, others who lived a distance from them, or after them could never have known them.

D. Could not those who heard them tell what they saw, tell it to others, and these tell it again, until every body would get to know it?

C. Some things have come to us in this way; any thing told from one to another is called tradition; if the same thing has been written it would be history. You can see I think that if the writer relates facts, that is, writes what did happen, and nothing else, that history is better than tradition, for we do not always hear the exact words of the speaker, and when we are telling what he said, we may remember exactly what he said, thus you may perceive that in time it might be very much changed.

D. Yes I see how that may be. I remember the story of the thirty black crows.

C. What is it?

D. Some one told of a man who vomited thirty black crows; the person to whom he told it, was curious enough to go to the man who told his informant: He said the other was mistaken, he had said three, that was the number such a one had told him. Our curious man went to this neighbour who smiled and said the story had grown larger since he told it; that there was a crow he had little doubt, for he heard the sick man say so. When the sick man was enquired of, he had not vomited a crow, but something as black as a crow, here you see that by telling a few times something as black as a crow, becomes thirty black crows.

C. It is a good story, and there are many things like it; it may be it is a little the same way with history; very few the persons who write history see all that write about themselves, but whether

do or not, what they write is what they would speak if they did not write, and should be read as if it were spoken. The same may be said of geography: it is an account of places, and should be read just as it ought to be told. The rules of grammar and arithmetic are the same; the author writes for us, what the teacher would otherwise have to tell us. What do you write?

D. The copies which the master sets for me, or from copperplate.

C. Can you remember any of your copies?

D. Yes, "Emulation seldom fails," "Kings may win crowns but cannot conquer death."

C. How often have you had these for a copy?

D. Twenty times I suppose.

C. Do you know the meaning of Emulation?

D. No.

C. Do you like to write that which you not see any sense in?

D. I must write the copy.

C. Would you not like to write something that you know?—something which I have seen yourself?

D. We have no such copies.

C. But could you not write them without a copy?

D. Could you not write in this manner "The sun appears to rise in the east, to pass near us, and set in the west. From the east we can first see light in the morning; then we can see none in the evening, in the middle day; from then until we can see it again it is night; the two together make 24 hours." Do you not know this and much more, about the days being shorter at some seasons in the year, than at others; and that in the days are shortest the nights are longest, and that the weather is coldest in the days are shortest? Could you write a description of a horse, a cow, or any other animal that you have seen? Did you not tell on paper whether you were happy when you have done well or not? In short could you not write any thing you know?

The other scholars would laugh at

me for writing nonsense, and the master would punish me for scribbling in my book; both he and my father have said I ought not to write any thing but my copy.

C. Would you not like to write such things if your teacher and parents were willing?

D. Yes, if the boys would not tease me.

C. If the teacher and all parents were willing, all boys would be writing what they know; and then no one would think of laughing, except at their folly for having so long written that which they knew nothing of. But for cyphering, can you do that well?

D. I have cyphered through compound interest.

C. Do you understand all that you have done?

D. I can do part of the sums, the master shows me how to do the rest.

C. Does he tell the reason why they are done so?

D. Yes, because that is the rule.

C. Let me try you and then I can see whether he does like our Teacher. We will make a sum in reduction. Can you tell how many ounces are in 6 cwt 3 qrs 10 lbs?

D. Yes, 12256 oz.

C. You multiplied by 4, 28, and 16, would it do as well to multiply by 16, 28 and 4,

D. I don't know, I never tried it; this is the way all the boys do at our school, and the master says it is right.

C. Well try it over again and begin with the 16.

D. It does not come out the same, 11128, I suppose I have done the work wrong.

C. No, you multiplied rightly.

D. But perhaps I did not bring in the 3 and ten rightly.

C. Yes you brought them in as you did before, but it will not do. In the first place you multiplied the 6 cwt by 4 because there are 4 qrs in a cwt, and you wanted the 6 cwt brought to qrs that you might bring in or add the 3 qrs to them; you then had 27 qrs, these you multiplied by 28 to bring them to lbs, that you might add the 10 pounds because there are 28

lbs in a qr; you then had 766 lbs; you next multiplied by 16 to bring the pounds to ounces, because there are 16 ounces in a pound, and this made 12256 oz. Now these 6 cwt 3 qrs 10 lb and the 12256 oz are just alike heavy; by the work you have done, nothing about them is changed but the name; perhaps you do not understand me; if you take a bucket of water and put it all in tumblers without spilling a drop, though there would be so many of them, they were all taken out of the bucket, and can all be put in it again;—or what may be more plain, if you put 16 oz weights in one scale and a pound weight in the other, they will balance each other, that is the scale beam will be level; or if you should place 12256 oz weights in one scale, and 6 cwt 3 qrs 10 lb in the other they will balance also. This is the way in reduction, the value is not changed, by changing the name; if you reduce a dollar to half dimes, or five cent pieces they are still worth a dollar though they are so small, and worth no more than a dollar though there are 20 of them; each is worth 5 cents, and 20 times 5 cents make a hundred cents, or a dollar.

D. I think I understand what you say very well, and if I do, it will be of use to me in other sums in reduction. Let me see if I do, we multiply yards by 4 and by 4 to bring them to nails; Is not this because there are 4 qrs of a yard in a whole yard and that multiplying yards by 4 brings them to qrs of a yard; and multiplying the qrs by 4, brings them to nails?

C. You are right.

D. I am very glad we have talked about it for I have often been puzzled with such things; I never knew before why we say 4 qrs make a cwt, and 4 qrs make a yard; I knew that a cwt and a yard were not the same, and yet four qrs make both; but now I understand that 4 qrs of a cwt make a whole cwt, and 4 qrs of a yard, make a whole yard, though I do not understand why or how four nails make a qr; I do not know what a nail in cloth measure means; do you?

C. Yes; it means a quarter, of a quarter

or fourth part of a qr; it is measured on a yard stick, $2\frac{1}{4}$ inches from the end and was called nail at first, because it is about as long as a common nail.

D. I think I can do sums in reduction very easily now, because I shall know what I am doing. Can you tell me any thing about the Rule of Three? Why is it called the rule of three?

C. Because every question in it has three numbers or sets of numbers, which are called the three terms. We will make an example or question. If a pound of butter cost ten cents what will twenty pounds cost? Now there are three numbers, or terms in this.

D. Where are they?

C. The one pound, the twenty pounds, and the ten cents.

D. I see it. Pike says "Place that which is of the same name or kind with the answer in the third place;" there is no answer, how am I to know which of the three is like it?

C. What is it the question requires you to find out?

D. Let me think;—why the price of 20 lbs of butter.

C. Will not that be money?

D. Yes.

C. Is not the 10 cents of the same name or kind.

Yes.

C. The 10 cts, then must be put in the third place, or on the right hand.

D. The rule then says "Consider from the nature of the question whether the answer is to be more or less than this third term;" I do not understand that.

C. That is because it is hard for men to write so that little boys can understand them; it means nothing more than this, that you are to consider whether the twenty pounds will cost more than the one pound.

D. That is easily told; any one may know that twenty pounds will cost twenty times as much as one lb.

C. If so the rule requires that you should place the 20 lbs on the left hand of the 10 cents, and to finish the statement, place

the 1 lb on the left hand of it. What does the rule say further?

D. Bring the first and second to the lowest denomination in either, and the third to the lowest denomination in it. This is done by reduction and I could do it now, but I believe it is not required in this question, for the first and second are alike already, that is they are pounds without any ounces or drachms, and the third is cents without any halves or quarters.

C. Well what next?

D. Multiply the second and third together and divide by the first;—I see now what I never noticed before, that this way of stating and working causes the larger quantity to be multiplied by the price of the small quantity; each one of the twenty pounds must cost as much as the one lb did, or twenty times ten cents, which are two hundred cents. But why must we divide by the first term, it will make no change; the 1 can be taken out of the 200, two hundred times?

C. It need not be done when the first term is one, but if more than one it must.

D. Yes: I perceive; if it had been 2 lb which cost 10 cents, the 200 must have been divided by 2, for if 2 pounds sold for 10 cents, then must 1 lb have sold for only half, or 5 cents, and of course 20 lb would only have cost 20 times 5 cents, or 100 cents; we must divide the 10 cents, the price of 2 lbs, by 2, to find out what the 20 lbs cost.

C. Let us try if we can prove the answer to be true; do you know the meaning of the word proportion?

D. I think I do; does it not show the difference between things that are alike in some ways?

C. Yes. There can be no proportion between things which are not alike; there is no proportion between ten cents and a pound of butter, but there is a proportion between a pound and any other quantity of butter, and so there is between ten cents and any other sum of money, and by this we can prove whether the work be true. What proportion do you say there is between 1 lb and 20 lbs of butter?

D. They are alike in one thing—they are both butter, but one has twenty times as much as the other, then they are in the proportion of twenty to one, and I see now that this is the case with the money, the 200 cents are just twenty times as much as the 10 cents, so that there is just the same proportion between the two quantities of butter that there is between the two sums of money, or that 20 times 1 lb of butter, must cost 20 times the price of 1 lb, which is twenty times ten cents, or two hundred cents.

COMMUNICATIONS.

Lancaster.

Mr. Gilbert.—When I am learning geography, I should often be pleased to know more of some places than the book tells; I suppose it may be so with some of your readers, so I will give them a short description of our city, and it may be some of them will oblige me by doing the same of the place where they live, if they know of any thing interesting.

Lancaster in Pennsylvania, is situated near the Conestoga creek or river, 64 miles west of Philadelphia, and 35 miles south east of Harrisburg. It has been considered the first inland town in the United States. The country around it is fertile, and highly improved. There is a great deal of wealth in the city itself. It does the principal business for some distance around, there being no other large town in the county. It is also the seat of justice for Lancaster county, the place where the courts are held. There are several trades carried on pretty extensively for the supply of other places, such as hatting, saddling, coach-making, &c. There are some ingenious mechanics, particularly those who work in metal. The Pennsylvania rail road passes through the northern part of the city.

The Legislature of Pennsylvania, sat in this place for several years, before the removal of the seat of government to Harrisburgh. We have Franklin college and an academy. The former is now partly used for a gratuitous infant school, in the latter is an infant and classical school. There are a number of schools in the

place though the children are not all well educated. Population in 1831 was 7,604.*

ANN.

*Our correspondent has omitted to mention the most conspicuous objects in the city, namely, the towering steeples with churches below them; perhaps she did not think of this, as every sect. quietly builds its own, very little disposition is manifested to pull down those of others.

A FABLE.

There was once a mouse sitting at her hole and a cat watching for her. "Come here pretty creature, said the cat, till I stroke your back." The silly mouse went up to the cat who ate it up.

By this you can see that one ought not to trust flatterers.

F. R.

Anecdotes.

Bishop HEBER was once at the house of one of his friends, when he called a little girl to him that he might hear her say her lesson. He talked to her for some time after, about it and other things. When the Bishop went away, one of the family asked the little girl, how she liked him. "Oh! very much," said she; "he told me many things, but I don't believe he knows much more than I do myself."

A small boy was once asked what He did at school. "I say b, a, bā, and sit on a bench," was his answer.

"I try," said little Ann, "to do everything which my mother tells me is good, and to let alone everything which she says is bad. "I try," said Emily, "to find out what is right and wrong myself, and then I can do the right and let the wrong alone, when my mother is not near to tell me. It often happens that I want to know, what is right and wrong when I am on errands, or at play, where I cannot get to ask her. I have found out that it is right for me to do for others whatever I would wish them to do for me if I were in their place, and that it is wrong for me to do any thing to them which I would not be

willing they should do to me, if I were in theirs. I am never happy without I mind these things, and my mother says she knows no better way for herself."

If parents and teachers would act upon the leading ideas in these anecdotes, they would form the basis of reformation in schools—in families—in the world.—Ed.

SELECTIONS.

"Like the bee, let us appropriate that which is ready made to our hand."

Rights of Authors.

The course pursued in making selections for the Inciter, will be that of Pierpont, to extract whatever is deemed suitable, wherever found, and for the reason given by him namely, that everything published is public property; that it is not the origin but the utility which interests the reader, and if good is done the writer ought to be satisfied. Besides; the liberty will be taken to add, diminish, or alter at pleasure. By omitting to give credit the responsibility is thrown solely upon the editor. It is perhaps impossible to tell when we have an original thought, and such a novelty may never appear in this periodical, but whether or not, it is at the service of all who think they can make any use of it, without mention of the humble source from whence it is derived. Should it be thought by any that the Inciter has merit of its own kind, they will of course make reference, and others will avail themselves of it.—Ed.

Sunday Morning.

It was Sunday morning. All the bells were ringing for church, and the streets were filled with people, moving in all directions. Here, numbers of well dressed persons, and a long train of charity children, were thronging in, at the wide doors of a handsome church; there a number equally gay in dress, were entering an elegant meeting house. A Roman Catholic congregation was turning into their chapel; every one crossing himself, with a finger dipped in holy water as he went in.

The opposite side of the street was covered with Quakers, distinguished by their

plain and neat attire, who walked without ceremony into a room as plain as themselves, and took their seats the men on one side, the women on the other, in silence. A spacious building was filled with an overflowing crowd of Methodists, while a small society of Baptists assembled in the neighbourhood.

Presently the services began. Some of the churches resounded with the solemn organ, and the murmuring of voices following the minister in prayer; in others a single voice was heard; and in the quiet assembly of the Quakers, not a sound was uttered.

Mr. Ambrose led his son Edwin round these assemblies; he observed them all with great attention; but he did not as much as whisper lest he should interrupt any one. When he was alone with his father, "Why," said Edwin, "do not all people agree to go to the same place; and to worship God in the same way?"

"And why should they agree?" replied his father. "Do you not see that people differ in a hundred other things? Do they all dress alike, and eat and drink alike, and keep the same hours and use the same diversions?"

"In those things they have a right to do as the please," said Edwin.

"They have a right too," answered his father, "to worship God as they please. It is their own business and concerns none but themselves."

"But has God not ordered particular ways of worshipping him?"

"He has directed the mind and spirit with which he is to be worshipped, but not the manner. That is left for every one to choose. All these people like their own way best."

The several congregations now began to be dismissed, and the streets were again overspread with persons going to their own homes. It chanced that a poor man fell down in the street in a fit of apoplexy, and lay for dead; his wife and children stood round him, crying and lamenting in the bitterest distress.

The beholders immediately flocked round, and with looks and expressions of compassion, gave their help. A Churchman raised the man from the ground by lifting him under the arms, while a Presbyterian held his head, and wiped his face with his handkerchief. A Roman Catholic lady took out her smelling bottle and applied it to his nose. A Methodist ran for a doctor. A Quaker supported, and comforted the woman; and a Baptist took care of the children.

Edwin, and his father looked on. "Here," said Mr. Ambrose, "*is a thing in which mankind are made to agree.*"

The Wasp and the Bee.

A wasp met a bee, and said to him "tell me, what is the reason men are so *fond* of you, while they are so ill-natured to me? We are both very much alike, only the broad yellow rings round my body make me much handsomer than you are; we have both wings; we both sting when we are angry, and we both love honey; yet men always hate me and try to kill me, though I am more familiar with them than you are.

"I pay them visits in their houses, at the tea-table, and at all their meals, while you are very shy, and hardly ever come near them, yet they build you curious houses, sometimes of wood, and sometimes of straw, and take care of you. I wonder what is the reason."

The bee answered, "because you never do them any good, but on the contrary, are very troublesome and mischievous; therefore they do not like to see you; but they know that I am busy all day long in making them honey. You had better pay them fewer visits, and try to be useful."

The Delights of Play.

Up in the morning as soon as the lark,
Late in the evening when falleth the dark,
Far in the moorland, or under the tree,
Come the sweet voices of children to me.
You tell me I'm old, and my hair is gray,
But I sit in the sunshine, and watch you
at play;
And a livelier current doth run through
my vein,

And I bless you, bright creatures ! again
and again.

I rejoice in your sports, when, in warm
sunny weather,
You are running, and jumping, and wrest-
ling together ;
But I see what you see not—the sorrow
and strife,
Of the years that will come in the con-
tests of life ;
For I am an old man, and age looketh on
To the time that will be, from the time
that is gone :
But you, blessed creatures ! you think not
of sorrow,
Your joy is to-day, and ye have no to-mor-
row.

Ay, sport ye, and wrestle, be glad as the
sun,
And lie down to rest when your pastime
is done ;
Your dreams are of sunshine and blossoms
and dew,
And the God of the blessed doth watch
over you,
And his angels are always commissioned to
keep
Unbroken the calm of your rosy sleep ;
And an old man's blessings doth on you
dwell,
The whole day long—and so, fare-ye-well !

I didn't think.

A little boy was once asked a ques-
tion about his lesson, which he could
not answer. The question was a plain
one. His teacher put the question to
the next boy, who answered it imme-
diately ; when the first boy cried out
—"O, I didn't think."

I have often thought of this little
boy's expression, when engaged in my
duties in school, and perhaps if I ex-
plain my meaning, some children may
be able to understand it.

If I see a scholar looking about
heedlessly, or turning his head at every
move in the school-room, (and I do
sometimes see it,) I say, surely that
boy "*don't think*" for he usually has a
poor lesson, and very frequently none
at all.

Some children and young people
will not go to school. I pity them in
my heart. They say they are too ig-

norant—too old, or too much occupied
in other things. Surely they "*don't*
think," or they would not say they are
too ignorant to need *instruction*, or
too old to get it ; since they will have
much use for it—nor too busy to at-
tend to the very thing for which they
were born.

When I see children careless of ad-
vice, bent on the indulgence of their
own wishes, and indifferent to the future,
I know that I may say of them "*they*
don't think," or they would not thus
throw away their time and lose the
best things in life, for trifles that are
not worth thinking about.

I have only time to say to all chil-
dren, that they will never get good les-
sons—nor love the school—nor please
their teachers—nor become useful re-
spectable, and happy, *unless they think*.

SIMILAR OPINIONS.

Promote as an object of primary im-
portance, institutions for the general
diffusion of knowledge. In proportion
as the structure of a government gives
force to public opinion, it is essential
that public opinion should be enlighten-
ed.—*Washington*.

By far the most important bill in our
code, is that for diffusing knowledge
among the people *No other founda-
tion can be devised for the preserva-
tion of peace and happiness*. Make
a crusade against ignorance, establish
and improve the law for educating com-
mon people. Let our countrymen know
that the people alone can protect us
against the evils of aristocracy. * *

The tax which will be paid for edu-
cating the common people, is not more
than a thousandth part of what will be
paid to kings, nobles, and priests who
will rise up among us if we leave the
people in ignorance.—*Jefferson*.

Of the various projects which present
themselves as tending to contribute
most essentially to the influence and
happiness of a people, there is none
which gives more ample promise of suc-
cess, than that of a liberal enlightened

system of education by means of which the light of knowledge will be diffused throughout the whole community and imparted to every individual susceptible of partaking of its blessings; to the poor as well as to the rich; so that all may be fitted to participate in, and to fulfil all the duties which each owes to himself, his God, and his country.

Gov. Wolf.

If the money unnecessarily expended in the administration of the general government, were but appropriated to the support of good industrial schools, it would not be long until there could not be a fool found who would desire to gratify national pride at great cost, for the sake of competing in luxury, with nations, whose aristocracy and profligacy of expenditure, he affects to despise.—*Modern.*

APHORISMS.

The desire of improvement discovers a liberal mind, and is connected with many accomplishments, and many virtues.

He that waits for an opportunity, to do much at once, may breathe out his life in idle wishes; and regret, in the last hour, his useless intentions and barren zeal.

Many men mistake the love for the practice of virtue; and are not so much good men, as the friends of goodness.

That every day has its pains and sorrows is universally experienced, and almost universally confessed. But let us not only attend to the mournful truths: if we look impartially about us, we shall find, that every day has likewise its pleasures and its joys.

Deceit discovers a little mind.

Cultivate the love of truth.

No confidence can be placed in those who are in the habit of lying.

Neglect no opportunity of doing good.

The real wants of nature are soon satisfied.

Modesty is one of the chief ornaments of youth.

To be good is to be happy.

Good or bad habits formed in youth, generally go with us through life.

Our best friends are those who tell us of our faults, and teach us how to correct them.

If tales were not listened to, there would be no talebearers.

Whatever is worth doing at all is worth doing well: but it is impossible to do anything well, without attention.

Vice, soon or late, brings misery.

We were not made for ourselves only.

A good person has a tender concern for the happiness of others.

TO WHOM IT MAY CONCERN

The price of subscription for this paper is one dollar per annum in advance, or before the 2d number is sent. As it is an experiment, it is uncertain whether the expense of publication will be defrayed; whether defrayed or not it shall be continued one year at least, if the editor and publishers are continued. Having no prospect of profit, loss, as much as possible must be guarded against; the cash conditions therefore must be complied with, and all postage, paid whether on letters of business or communications for the paper. Nothing will be taken from the P. Office unless post paid. There is a positiveness in this announcement, which may appear arbitrary and high handed; do not thus interpret it; it is not that we cannot *afford* to do otherwise—it is that we are *unable*. So well are we satisfied of the utility of something in the way that we are now attempting, that did we possess the means we would give it a "Tract" circulation. If it served no other purpose it would do to improve upon, by those who are more competent.

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THE INCITER.

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Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA IN SOCIETY.—*Rising Generation.*

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No 2.

EDITORIAL.

To Parents.

When you reflect upon the responsible situation in which you stand to those whom you call by the endeared appellation, children, does it not frequently happen that you are led to enquire after this manner; "Am I doing the best my circumstances permit for those little ones to whom I am under every conceivable obligation? I voluntarily assumed the relation of parent; am I fulfilling its duties wisely and faithfully?" And are the answers given by your understanding and your feelings, such as satisfy you? Are you able to say, "Always aware of parental responsibility, I cannot charge myself with having omitted any thing that my intelligence could devise, and my resources effect—both have been in requisition for the benefit of those beings, who but for me, would not have existed to have such claims?"

The parent who is never engaged in this kind of self examination, must be afflicted with morbid insensibility in his moral feelings. He whose bosom returns a peace-giving answer, is emphatically a happy parent, and in the business of training, stands the best chance to be a successful one.

There are not many who succeed to their wishes in educating their children, and it would be an interesting investigation to trace the failure to its cause. Few are deficient in affection; few are without solicitude for the welfare of their children, few are entirely destitute of means, and yet it is believed that the parent could not be found, who has succeeded to his utmost wish.

Others may account for this differently; I impute it to ignorance. Ignorance in the first place, that all knowledge is of facts; secondly that facts are ascertained by the senses; thirdly that there is in their children a moral feeling, whose teachings are better than any moral rules; and fourthly, that this feeling can never be fully developed in their own children, so long as they engross the parents care, to the exclusion of those around them.

He who thinks to educate one human being, or one family of human beings, perfectly, in the midst of imperfection, will, in my opinion, assuredly incur disappointment. Surrounded by ignorance, how can we be wise? Surrounded by vicious habits, how can we expect the moral sense to be delicate?

Our notions regarding what is useful knowledge must be modified; regarding the mode of acquiring it, they must be simplified, and our benevolent feelings expanded, so as to embrace more than that which is our especial charge, ere we may rationally hope to realize our wishes within the confines of our own families.

How we get Ideas.

One of the first things I wish our young readers to do, is to take particular notice how it is they get to know any thing. I hope they will excuse me if I urge this upon them very often, and very earnestly. I wish them to excuse me for telling them they have five senses. I do not tell them this because I suppose they have not made use of them all, but because I wish them to try if they have not five different ways of knowing things, and whether they have any more. It will be well, to

try not only to use your senses, and find out how many you have, but to observe what kind of knowledge you get from each of them.

This may be of more use to you after a while than you now think. The time may come when you will have need to use them all before you can satisfy yourselves about something you are examining. It may happen that a substance you find, looks like some other you have seen and heard the name of; but it does not smell like it; it is rougher or smoother; it rings, or does not ring like it, on being struck; at last you put it to your mouth and find out perhaps, that it is, or is not the same; whether you discover or not, you may observe you have used the five senses. By taking notice which sense you use, you will get a ready use of them, and learn which you must apply to, when you wish to get knowledge of any kind.

You must use your senses yourselves, and get the ideas or images which they bring into your minds; from others, you must learn the names. With your eyes you get the ideas or images of colours and shapes, called *sights*. With the ear you get the idea of noises; this is *sound*. With the whole body, but especially with the ends of the fingers, you get the idea of shape or form, of coldness, heat &c. this is *feeling*. Ideas are brought into the mind from some things by the nose; that which causes the idea is called the *odour* or *smell* of the thing. We get ideas by the mouth that we could not have in any other way, and the name by which they are known, is *flavor* or *taste*.

The images or ideas thus brought into the mind are called *sensations*.

Things without us, make these sensations; that which the mind does with them they are made is *thought* or *thinking*; the thoughts we have names or words these words we spell with letters. A horse passing before us, is an *object* or *thing*; our eyes are open we cannot avoid seeing him; his figure produces a *sensation* through the eye. If we observe that he is larger or

smaller or otherwise different from other horses, it is *thinking*; the sound we make when we pronounce his name is a *word*, and horse are the letters which spell it. When those who can spell and read, see the letters horse, it causes them to remember the *sound* horse, this causes them to think of the *idea* they have of a horse in the mind, and this idea refers to the animal himself, the *thing* that made the idea.

Observe carefully whether these things are so, and if you should think the time you spent at it was not well employed, I am willing to take the blame.*

*In a school taught at present by an intelligent friend of mine, it is not long since the scholars observed that they had five senses, although several of them were pretty well grown, and though the school is in a reputed sensible neighborhood.

How we do.

We spend a portion of the time in our school, in an exercise which we call "Lessons on Things." This name we have adopted from an excellent book bearing that title. I introduced this mode of acquiring knowledge, into school many years ago, and have practised it occasionally ever since; but never carried it to such nicety as the author of this work, to whom I acknowledge myself indebted for some valuable hints. No school or family should be without the book.

Our readers must hear something of it. Having called the attention of the school by announcing that we will have "a lesson on things," I hold up to their view some substance with which they are acquainted, a chesnut for instance, I ask the name; as many as can, name it in concert, the rest in succession. I then ask them what is the most obvious property, that is, what it is they notice first; they answer, it is brown. Next it is roundish, and other remarks concerning its external appearance. I then ask if they can see through it. When this question is answered, they are informed that *opaque* is the word to express that appearance. I then call their

attention to the fact that I cannot bring my thumb and finger together, while the nut is between them; we find the cause of this to be solidity or hardness. We then examine its parts the shell and kernel; we discover that the first is flexible, elastic and tough; the last soft and sweet. We then enquire whether it be an animal, vegetable, or mineral substance; then where does it grow? how is it enclosed? when is it ripe? &c. Every one is desired to ask questions for information, and all who can are expected to give answers.

When the pupils became sufficiently interested, I proposed that each one who could write readily should have his slate, and first writing the name of the article under examination, follow it by such a description of its appearances and qualities as came under our observation. When in the description, we take words which are not in common use, we define them as well as we can, writing the definition after the word; but an example will make it more plain.

A *Chesnut* is . . .
Brown,
Roundish,
Opaque, that cannot be seen through.
Hard,

Its *Parts,* are
Shell and Kernel.

The first is
Flexible, that may be bent,
Elastic, springy.
Tough, not easily separated.

The last is
Soft.
Sweet.

It is a vegetable; grows on the chesnut tree, enclosed in a bur, and is mature in Autumn. It is pleasant to eat.

The above is done with as much expedition as the practice of the pupils will permit, and after correcting, is carefully entered into books kept for the purpose. All this occupies some time, and the only question to decide upon, is whether the probable advantages fully compensate for that time; I of course think they do more. Let us see what we may count as gain.

First, it leads us to examine more closely than we did before; we learn the words used to express properties; we learn their meaning by looking; for when we bend a piece of whalebone, we get to know what flexibility is; when on letting an end go, it returns to its former position, we get the idea of elasticity; we learn to make the hand move in accordance with the thoughts of the mind; we learn to write, (for more care is bestowed on these manuscript "Lessons on things," than on copy books,) and each one has a book of his own making, containing knowledge, to which he may have frequent occasion to refer in after life.

Geography.

GEORGE.—In No. 1 it is said that "a map of the world, is two rings called eastern and western hemispheres, or halves of the world;" I see it is so in my Atlas, but I do not know why it is divided as it is. Would it not be better to have the parts we are best acquainted with, on the same hemisphere? England, for instance, of which we hear so much, is on the eastern hemisphere, while South America, of which we hear so little, and even some parts of North America, have very little said about them, and yet they are on the same hemisphere that we are. I think it is likely it is the same way with the people of England, that they know more of us than they do of some of the countries on their half of the world, as it is divided on the map.

MARY.—The map is divided into what used to be called the old and the new world. The histories of the old world go much further back than any we have of the new. Those histories make no mention of America, for the historians did not know there was such a country; and as geography and history seem to belong together, there, propriety, I should think, in connecting on maps, those parts which are the sources of any history.

G.—How long is it since America was first known.

M.—I cannot tell how long since it was

first known; it has been known to what we call civilized people 341 years. A very extraordinary man, whose name was Christopher Columbus, a native of Italy, thought there must be undiscovered land toward sun set, and he applied to several governments of Europe to furnish him with ships, men and provisions, that he might go in search of it. They thought probably that it was a wild, extravagant notion, and did not grant his request for many years. He did not however, become discouraged, and finally Isabella, queen of Spain, favoured his project, and he was fitted out for his voyage of discovery. Columbus and his men endured uncommon hardships, and ran great risks, but at length they discovered some of the lands of the new world. This was in 1492.

G.—There does appear to be reason why America should be by itself, that I never thought of; and I suppose that is the way with many things which we do not understand, if we were to go about it rightly, we might understand them.

M.—True, George, and the first step towards finding them out, is to perceive that we do not know them; the next, to feel a desire to know them; and the last, to use the best means in our power, for making the discovery. When we do not possess the means of knowing ourselves, the best we can do, is to avail ourselves of the experience of others.

G.—But I wished to ask some more questions about the map of the world. Is there really a line around the earth, as is represented on the map?

M.—No. Neither are there tropics, polar circles, or other parallels of latitude, or yet meridians. All these are imagined to assist navigators and geographers.

Navigators know what latitude and longitude they are in on the ocean, they can any time tell what course they will go to any place they know of, and it is to it. If geographers know the latitude, and longitude of a place, they can tell what direction, and how far

it is from them. The map is a useful picture for them both; it enables them to tell by inspection without the trouble of calculation. The meridians and parallels of latitude are a guide to the experienced eye. The latitude of any place is found on the sides of the map, and the longitude at the top and bottom. Now by putting a finger of one hand on the latitude, and one of the other hand on the longitude, and moving both in the proper directions until they meet, the place sought will be found. Suppose you wish to find Cape Hatteras in N. America. We are told that it is in the 35th degree of north latitude, and 75th of west longitude. Put a finger of the right hand, half way between 30 and 40 on the right side of the map, and a finger of the left hand, half way between 70 and 80 at the bottom; move your right hand finger to the left, half way between the lines marked 30 and 40, and the finger of your left hand upwards between the lines marked 70 and 80, until they meet, and at the place of meeting you will find Cape Hatteras.

G.—It is said the belt of 47 deg. wide, having the equator in the middle is called the torrid zone on account of its heat; is it alike hot in its whole width, and all around the earth?

M.—No. The heat is greatest at the Equator. The sun is directly over it two days in the year, and never more than twenty-three and a half degrees from it. At the tropics, though the sun is directly over them one day in the year, yet six months from that time, it is 47 degrees from them.

G.—I do not understand how this is. I should suppose they see the sun as plainly at the tropic of Cancer, when it is directly over the tropic of Capricorn, as when it is over themselves, and I am told it is not further from them, then why not feel as much heat at one tropic as the other?

M.—That is a very natural question. Take a piece of board that has been planed,

hold it upright, facing the sun or candle; observe how light it is; gradually incline, or lean it away from the light-giving body, and observe whether the light on its surface does not grow more and more faint; or take two slates; place one of them in such a position that the sun's rays shall fall perpendicularly, or straight on it. Place the other so that they shall strike it obliquely, or slantwise; in half an hour after apply your finger to both, and feel if they are alike warm, and if you do not understand it, we will talk more of it when we meet again.

Astronomy.

Astronomy teaches the size, distance, motions, &c. &c. of the bodies or worlds which are in space.

It was long believed that the earth we live on, was an extended plain, rested on something that supported it, and that the sun, moon, and stars, passed around it once in 24 hours. This is now known not to be so; it is round like a ball; rests upon nothing; and is constantly moving very swiftly. That it is round is proven several ways; one is that when a ship leaves a port, or when two ships part, from each other, the tops of the highest objects, such as steeples, chimney tops, and the tops of masts, are the last objects seen. That it rests upon nothing, is proven from the fact that people live on all parts of it, where there is known to be land; and they have sailed all around it. This makes it certain that it neither rests nor hangs upon any thing.

If the earth is thus suspended or floating in space, in its own atmosphere, or air; other bodies may do so too; perhaps it cannot be known certainly, but there is no reasonable ground to doubt that they do. It is believed that all the celestial bodies, as they are called, are also round.

Every one may have observed that things look larger when they are near us than they do when at greater distance from us; if we know how far an object is from us, we can form a pretty correct opinion of its size; or if we know its size we can

tell its distance pretty nearly. Men who have that kind of learning, if they have the proper instruments, and are very particular, can tell exactly how far it is to any object they can see on the earth; this has often been tried, and is known to be true. Astronomers undertake to find the distance of the heavenly bodies from us, and from each other, in the same way, or upon the same principle. We cannot measure after them as we can when they tell us the distance between two places, or things on our earth, or when they tell us the size of a thing at a distance; but we may easily believe that they can very nearly, when they can inform us to the minute, for a whole year beforehand, when the sun, moon, particular stars, and clusters of stars will rise and set;—when, and how much of the sun and moon will be eclipsed, &c. which is all told every year in the almanacs. With their distances they know also their velocities.

As it is not likely that many of our readers have paid much attention to astronomy, or have books which treat of the subject, they will be willing to have a few paragraphs about the solar system.

There have been in the past time several opinions or theories, about the shapes and the motions of the sun moon and stars. The theory now generally received called the Copernican, or solar system, is, that the sun and all the stars we see, except a few, have very little motion; that this few, together with the earth, move around the sun in circles, called orbits. Those stars, which thus revolve round the sun are called planets; at present astronomers count eleven that make such revolutions. Mercury, Venus, Earth, Mars, Vesta, Juno, Ceres, Pallas, Jupiter, Saturn, Herschel.

The following table shows their sizes the length of their days, the days in their year and their distance from the sun.

The first column shews their distances respectively from the sun, being half the diameter of their orbits.

The second shows the diameter of the planets, which is the length of line pas-

ing through the body from one side to the other, through the centre.

The third shows how many of our days, or what part of one of our days it requires to make one of theirs; this is the same as the time required for any one of them to revolve on its own axis.

The fourth shows how many days they have in their year, that is, how many times they revolve around their own axis; while they are making a revolution around the sun.

	Dist. in mill. mile.	Diam. Miles	Length of days		Days in a year
			h.	m.	
Mer.	37	3224	24	5	88
Venus	68	7687	23	21	224
Earth	95	7920	24		365
Mars	144	4189	24	39	686
Vesta	225	213			
Juno	254	1425			
Ceres	260	160			
Pallas	266	80			
Jup.	490	89170			4330
Sat.	900	79042	9	56	10746
Her.	1800	35112	10	16	30688

It must not be understood that the table is strictly true; for example, the orbits of the planets are not circles, but ovals, and therefore must be at a greater distance from the sun in some parts than others; the same may be said of the length of their days &c. When we wish to get correct ideas about something which is new to us, it is best perhaps to make ourselves acquainted with the outline or general facts first; when we have done this, we can examine the particulars, without much danger of confusion.

The sun is thought by some astronomers to be a great globe of heat and light 883246 miles in diameter, having as it has been said but very little motion itself, but being the common centre of motion for the planets which have been named. These the table shows to be of different sizes—different distances from the sun, and wheeling around it with unequal velocities, or swiftness.

Before the positions and motions of the spheres or planetary system can be understood, it is necessary to suppose two forces

or powers in nature acting against each other. When we imagine these forces applied to the sun and the planets which revolve around it, we must think of one of them as always tending to draw the planets nearer to the sun, and the other tending to drive them further off. These opposite or contending forces are supposed to explain the circular motions of lighter bodies round heavier ones. You will get a pretty good idea of what astronomers mean by them if you run a peg into a hard apple or potato, tie one end of a string as long as your arm, to the peg, and taking hold of the other end swing it gently around you. The drawing of your hand would bring the apple to it, if there was not something to prevent; and the inclination or tendency which the apple has to leave the circle it moves in around your hand, would at any time carry it off in a straight line, did not the string held by your hand prevent it. That which among the spheres tends to bring bodies together, as the string in this example, is called the Centripetal force or attraction; the opposing one, Centrifugal.

The other celestial bodies are called fixed stars, and are supposed to have planets revolving around them as the sun has. From the smallness of their sizes, and other observations made about them, they are believed to be at very great distances from us; so great that little except their existence is known.

Old and New Ways.

FRANCIS.—I am tired; I wish school was out; it seems to me as if this is the longest day I ever lived. If I did not know better, I should think a week had passed since dinner.

RICHARD.—It is because you have been idle; if you had employed yourself industriously at your studies, the time would not have appeared so long.

F.—Let the cause be what it may, I am tired, and I wish school was out; not only so—I wish it was vacation. I should be glad to spend a month out of the hearing of Nouns, and Pronouns, Cones and Parabolas, Plus, and Minus, Isthmus' and

Straights, with all those sounds that continually ring in my ears. How gladly would I exchange them all for the singing of the birds, the noise of the winds, the bubbling of a water-fall, the lowing of the cattle, the bleating of the sheep, and the sound of the woodman's axe, even if I had to wield it myself.

R.—Did you ever try making this last kind of music for an hour?

F.—That I have, and I never found any thing which gave me a better appetite, or better spirits; the plainest food had a fine relish, and I have felt so buoyant, that I could hardly walk without kicking up my heels. I don't see the use of being confined in a school room at the very time we could enjoy ourselves, to learn so much which can never be of use to any one, unless he understands more of it than I do.

R.—Never mind that, you will understand it when you grow older.

F.—May be so, and I should like to put off learning it till then. My grand father says, when he was twelve years old, he liked exercise as well as I do, and that it was very difficult to confine him, but now the less he is obliged to take the better; his only pleasure is in thinking. He says he wonders he did not find it out sooner.

R.—And cannot you take a hint from grandfathers experience? He has been boy and man both, and if he has found that there is greater pleasure, or benefit in study, than in bodily exertion, we might take his word for it, and save ourselves much trouble.

F.—You can do so if you choose it; I like my own experience so far as it goes, quite as well as I do grandfather's; and in this matter it is, that to sit down and make a regular business of thinking, is not in my line; it is not to my taste, and my mind won't be forced to it; you can't think how absent I am, great part of the time I am at books.

R.—What are the subjects which engage your attention, when your mind is thus absent?

F.—I cannot say that any one engages me, for just as I begin to think of something

that pleases me, I remember that I am neglecting my studies, and if I don't the teacher does, and then I force myself away from the one, and try to place it on the other; but I do no good. You cannot imagine how ignorant I am of that which I have learned; it is very little indeed that I understand about it.

R.—Your grammar recitations are creditable to you, you parse well and correct under all the rules. You surely could not do all this in ignorance of grammar.

F.—The way to satisfy yourself of that would be to try me with something which is not in the author; what with a good memory, and a pretty good turn for guessing, I can mostly go with the book; but I assure you I know nothing about grammar out of a grammar book. It is the same with a great part of arithmetic; I know no better what the after rules mean, or what they are for, than I did when I was four years old; indeed I have but a very imperfect idea of the reason for carrying one, in simple subtraction, when in the preceding column I take a greater number from a lesser.

R.—I cannot conceive how you get along so well, if you understand as little about it as you say.

F.—But I can; I get along pretty much as the parrot does, I repeat what others say, and I shall have to do so until I learn something, which I have not yet learned. I either have no capacity to learn, or they do not go about teaching me the right way.

R.—I suppose then, it must be the latter, for you certainly are before most of us in quickness to take up some things. In calculations to be made with the head you are greatly my superior, and the skill and handiness with which you perform many actions almost discourages me.

F.—I am at no loss to make calculations about that which I am amongst; when I am counting up the value of those articles which I handle daily, I can refer to them in thought if they are not before me, and thus perceive very clearly what I am doing, and of course can know when it is done right. I could easily tell the amount of a

given number of yards, bushels, or pounds at a given price, if I were buying or selling them, though I should find it difficult to assure myself I was right, if I were to find the same thing in the author, and had to do it after his directions.

R.—Why you seem to have pretty nearly such notions as those I read the other day. The writer gave his opinion that a school house should be a little world; should as far as possible, have in it every article we trade in, or with which we are to be made acquainted; have weights and measures of all kinds, and that the scholars should transact business before they make the calculations.

F.—In such a school I could get along very well; when I have all the things before me, I can learn almost without an exertion. When did you read this? Is there such a school any where?

R.—I rather think not; it is said they have made some progress toward it in several places, but have not been able so far to succeed to the wishes of those who think most highly of this mode of teaching.

F.—What has prevented them.

R.—Two causes, I believe. There has not been a sufficient number of persons found in one place, who approved it, and they have not been able to raise money enough to carry it into operation.

F.—Money enough! why surely it would not take a large sum to buy all sorts of weights and measures, and samples of those things which are to be weighed and measured; and the first expense would be all, for they would serve a school for a lifetime.

R.—These are but a small part of the cost which they contemplate. They must have a farm in the first place; this you know, is no trifle. Secondly they would want a number of work-shops, together with the tools and materials to carry on the different trades; this you can readily perceive would require another good purse.

F.—What use would they have for a farm, and shops about a school?

R.—They say the scholars can earn their living by the employment of their time when

they are not at study, either on the farm, or at some trade. They say there will be several advantages in it; first education will cost nothing after the first expense; secondly, each boy will learn some useful business as a necessary part of his education, by which he can ever after support himself; thirdly, exercise and study, thus alternated, will afford the best chance of health; and fourthly they think that the hours of labour will promote cheerful feeling, and return the boys fresh and lively to their studies.

F.—And I have no doubt but they are right. Why Richard this is the very thing I want, particularly if they are not too systematical. There are some days I should prefer working all day; on others, I had rather study all day, and whichever I feel inclined to for the time, I could do best. I am delighted with this kind of school; how is it that I never heard of it before? Where did you come across the account?

R.—I have read about it in several newspapers and pamphlets. The friends of this kind of education have good hopes that it will not be long until several of these schools (industrial they call them,) will be established.

F.—I hope they may, and that I may be placed in one of them; I feel very sure that I should be happy there and that I could learn fast. I cannot think of any thing they want to make them complete for my use, but Spy glasses, Microscopes, Electrical machines, &c. &c.

R.—Then you will be at no loss; they will have plenty of that sort of thing; they would not think a school complete without an entire sett of philosophical apparatus; very cheap and plain indeed, but suitable for explaining every thing.

F.—I should not care how plain so they would explain the things I want to know.

Why Richard what you have told me encourages me greatly; I can pursue my studies here with so much more life and vigor, that I trust I shall be prepared to enter such a school as soon as there is one opened. I cannot tell you how pleased I am with the prospect of it. Oh, Dick it is just the thing.

Definitions.

We are often at a loss for a suitable word to express that which we wish to convey; and not unfrequently we fail to get the precise ideas of others, from the words they use, especially if they are learned, and make use of those words which are called Technical; but still more frequently we suffer from not having examined closely the meaning of words, without which, no person can talk about any thing.*

William Cardell, a wise and benevolent man who died in this city, a few years since, did something at explaining small words, and it is a subject of regret with many persons that he did not live to finish his dictionary. I shall give a few definitions at this time, and more perhaps hereafter.

AND, added, joined, or one-ed connected. "You *and* I," means, you, *added*, or *joined* to, or *connected* with, I.

BUT, except, to leave out. "You may have all *but* this;" *except* or *leave out* this, you may have the rest. BUT has another meaning, to boot, or along with. You may have those, *but* you must take this also.

IF, suppose, grant; give, admit, allow. "If you will let me go, I will return." *Suppose*, give, grant, admit, or allow that I go, and I will return.

AS, equally, with, in the same manner with; the said, or same. "He is *as* good *as* you," *equally* good *with* you—has the *said* or *same* amount of goodness.

SO, has a similar meaning.

THOUGH, grant, permit, or allow, the condition and the consequences follow: "Though, you tempt me, I will not deviate from the truth."

YET, however, notwithstanding; an issue, or consequence in view, "though you say the earth is flat, *yet* I cannot believe it.

FOR the force, power, cause; the *why* "I cannot comply, *for* want of physical ability." The *for*, the *force*, the power, which prevents my compliance, is want of physical ability; it is the *cause* the *why* which prevents my compliance.

OR, other, shortened; not the same. "You, *or* I may have it;" you (in other case) I, may have it.

NOR, no or, no other. *Nor* you, *nor* I may have it," you may not have it, in other case, I may not.

EITHER, has a similar meaning with *or*. NEITHER, with *nor*.

UNLESS, LEST, ELSE, all contain the idea, except, lessen, release.

*A friend of mine says, language, is to thought, what clothing is to the body, and should be so transparent, that we can see through it.

The Wolf and Lamb:

The quarrelsome, bad dispositions of some people are shown pretty much as they are in real life, in the fable of the Wolf and the lamb. They were both drinking of the same stream, the wolf above, so that the water ran from him to the lamb.

Addressing himself to the unoffending creature, he said "You little knave, how dare you put your nose in there, and muddy the water which I am drinking?"

"It cannot be so replied the lamb; as I am lower down the stream, the water does not go from me to you."

"Now I think of it said the wolf; what character was that which you gave of me six months ago? How did you dare say that I was a fierce animal, and fond of mutton? You shall suffer for such slander before we part."

"It could not have been I," said the lamb, for whether true or false, I was not alive six months ago, to say it."

"If it was not you, it was your brother, and that is the same thing with me."

"You must be misinformed, I never had a brother."

"Will you contradict me said the wolf? no one shall dispute what I say without repenting of it." He then ran at the lamb, and would have torn it in pieces, in a short time, had not the owner come to rescue it, by driving him away.

Grown people often require things of each other, which they could not obtain were they not stronger than those from whom they require them; but like the

wolf, they never say it is because of their greater strength, or sharper teeth; they always have some excuse for what they do, which though it may not satisfy others that they are right, serves themselves as a plea for oppression, and wrong. The history of the world, shows that there has been no little of this kind of work in all ages. Something was wanted to be done, but it would not suit to give the reason why it was wanted, it was therefore necessary to conjure up some plea, and when nothing else would do, assert superiority.

The Puritans hung the Quakers, in New England; Queen Mary burnt Protestants, in Old England, and the Jews crucified J. C. in Palestine, all under pretence of ridding the world of nuisances; if little children could know the actions, and the motives of those martyrs, they would think of their destroyers pretty much as they do of the wolf. But let them know that bad feelings have small beginnings, and that they should be very careful not to persuade themselves that they are doing right when their conduct makes others unhappy,

The Condition of the Sexes.

SUSAN.—Oh brother how I wish I had been a boy.

GEORGE.—What makes you speak so strangely? Or rather what brought such an extravagant wish into your mind?

S. I see the boys have so many advantages, that I cannot help repining, every time I think of it.

G. Well you are a singular girl, that, every body knows, but this desire, so impossible to be gratified, is the oddest of all your odd whims. It surprises me; I cannot conceive why you should desire a change; especially as I do not believe we can wish for that which we know we cannot obtain.

S. I shall not argue with you about what is proper to desire, or possible to obtain, for I have not the least wish to change your opinion; and I feel quite sure that your logic will not convince me that I am satisfied with the privileges which girls have.

G. I should not attempt to convince

you that you *are* satisfied, contrary to your own experience; but if I could say something which would lead you to think you *ought to be* reconciled I should expect you to be happier for it.

S. It is kind in you to wish me happier, and I think we should always try to be as comfortable as we can; but it does not follow that we should endeavor to *reconcile* ourselves to wrong things; we may speak of them, and try to change them without fretting about them. I do think it wrong that girls have not an equal chance with boys, and I cannot be satisfied with it.

G. Why sister, I cannot understand you, if you have allusion to our own family, for I think no one will say that our parents are not as kind and indulgent to their daughters, as to their sons; indeed their partialities seem to be on your side. You know all our girls, that are old enough, have been to boarding school to learn drawing, music, and elegant needle-work, while none of the boys have been from home, nor have we had opportunity to acquire knowledge of the fine arts like you; more attention is paid to your dress, than to ours,—our labour is more constant and severe than yours; and we have no advantages over you at the table, surely. Your complaints appear to me to have no foundation, and I cannot help thinking you will be of the same opinion, if you will take the trouble to examine the matter carefully. I do not like to urge any thing upon others, but I really do wish you would try to see these things in the light I see them. If you cannot bring your mind to do that, explain yourself; endeavor to present your grievances to my view, as you see them.

S. That I will most readily; but first I acknowledge that what you say of the treatment extended to the sexes in our family, is strictly true; that is, there is more expence bestowed upon the education of the daughters, than the sons, and they render less in return for it; you will therefore, I hope, acquit me of harboring envious feelings, towards my brothers, or unkind ones toward our parents, nothing can be further from me than such feelings;

nor do I see it otherwise in the families of our acquaintance; it is, I believe, the fashion to do so every where; but this instead of reconciling me, is one great cause of my discontent.

G. One would think sister, you were about to turn reformer. Look well to it; it is no small work you have in view; older and stronger have had disappointment for their reward in projects of this kind, and do you hope to fare better?

S. I can endure as much of your censure, or your ridicule, as you may think fit to bestow on me, if you will first engage in a calm investigation of this subject.

G. And I will withhold both censure and ridicule, until the investigation is over.

S. Do you think, for a beginning, that the sexes have equal rights?

G. If you mean the right to vote at elections, and to manage the affairs of the government, I know they have not.

S. I mean natural rights. Have women as good a right to be comfortably fed and clothed; to have as ready access to useful knowledge—in a word, have they as good a right to enjoy every thing which has a natural fitness to make human creatures happy, as men have?

G. Most certainly, I do think so.

S. Have they any better right to these advantages?

G. Certainly not.

S. Do you think there is any difference in their capacities to enjoy those benefits which you say, of right, belong to them in common?

G. I have no evidence that there is any such difference.

S. So far then we are of one mind, and I am not aware of more than one question remaining unsettled between us.

G. What is that?

S. Simply what are those things which have this natural fitness—this adaptation to the promotion of human happiness.

G. I trust there will not be much disagreement between us regarding that, as we both have rather a turn for moderation and plainness.

S. And I do not see how we could dis-

agree, even if it were otherwise; for whatever superfluities we might allow the one sex, we should be willing to grant to the other; but let us try it by items.

If you think women entitled to as comfortable food, clothing, &c., as men, you must see the necessity of giving them control over the means to procure them; or which is the same thing, as ready access to the means of procuring them.

G. Undoubtedly.

S. And should they not be equally furnished with facilities for getting all knowledge which has any influence or bearing on the conduct and happiness of life?

G. There can be no difference of opinion about that.

S. We have only, then, to ascertain whether women have equal facilities for supplying the wants of their physical nature; and whether equal care is taken in their education, to furnish them with such knowledge as will best promote the happiness of beings circumstanced as we are. This will take but little time; any one who has been observing cannot but acknowledge that there is great difference in both.

G. Susan, you have involved yourself in a difficulty. You say that most cost is bestowed on the dress and education of the girls in our family, and that they do less to reimburse this cost, than the boys; you say this is common in other families so far as your observations have extended; and yet you complain that the education of females is defective, and the supply of their physical wants precarious. Do you not perceive there must be confusion in your ideas?

S. I do not; and I trust you will see that there is nothing incompatible in these seeming contradictions, when you take a less superficial view of the subject.

It is true, an equal share of the care and labour in providing subsistence, does not devolve upon us; and why are we thus favored? Less I have no doubt, on account of inability, than in conformity to common customs. I will appeal to yourself. I enjoy better health than you, and have great-

er physical power; would you be willing that I should take part in the out-door labour, clothed suitably for my employment, while the neighboring girls, of the same circle, are neatly dressed, and occupied with light household avocations?

G. I would not. There can be no doubt that the greater strength of the men is the basis of the customary division of labour; it is of itself reasonable and I should not approve of innovation upon it.

S. So far I have no objection to it; but where with the superior physical powers of men, is associated the idea of mental inferiority on the part of women it is far otherwise; were it not for this, so much pains would not be taken to make mere butterflies of us. I believe it is very commonly thought that we possess but little capacity for solid knowledge; hence affection, moved by pity, teaches us dress and address—sheer accomplishments, that we may not be without attractions; may be enabled to amuse ourselves, and be the delight of the men. I consider this no other than degradation.

G. You give the thing an odd turn and it is new to me, but I think there must be some mistake in it. We will examine the matter further when I have more time; I have already staid too long.

Encouraging.

Three of the newspapers in this city, besides several in other places have given approving notices of our little work.

This is pleasant for two reasons; we are fond of the approbation of others, when we know that our motives entitle us to it, and it must always be gratifying to find the intelligent and influential on our side, in any project having for its object the amelioration of man's condition.

It is a promising omen when party hostilities are superseded by that which is of deep interest to all; it is gladdening to perceive a union of sentiment on questions of radical import. In such cases we cannot doubt sincerity, nor avoid the conclusion that man is a better creature than he supposes himself to be; and that if he were

favourably situated for dispensing with distrust, he would find more happiness in living in harmony with his fellow, and performing kind offices for him, than in an opposite course.

Since the above was written I waited on all the clergymen of this city, and left with each a copy of the Inciter, with a request that he would examine it, and offer suggestions for the improvement of future numbers. They have all said the attempt is laudable, and none have pronounced it a failure.

I was gratified with the kind and gentlemanly treatment I received at their hands; and greatly encouraged by the interest they manifested for the welfare of those whose characters are now forming, nor am I without hope that they will visit not only the schools of their respective congregations, but all others. The cause of education is a common cause and if they can offer any useful hints let them be assured they are not uncalled for.

Terms used in a Printing Office.

The Inciter is printed on what the paper makers call "Royal" paper. The word royal relates to size, and not to the quality of the paper, nor does it mean an exact size, for it may vary an inch or two. There are other sizes, such as Foolscap, or common writing paper size, and Medium, both smaller than this sheet, and super-royal and Imperial, larger.

Printers have several names for the different sizes and kinds of types or letters. Besides capital and ornamental letters, beginning at the largest they use in common printing, Pica, Primer, Burgeois, Brevier, Minion, and some smaller sizes.

This which you are now reading is Burgeois size; it was chosen that you might not have to look too closely to see the words, at the same time that we might put as much matter as we could into a paper; if we had taken larger letter, you would have less reading; if we had taken smaller, you would have more difficulty to read it.

The book-binder would call it an octave

form; which means that the sheet is folded so as to make eight leaves, or sixteen pages. A sheet doubled as a newspaper, is called a Folio; if this be doubled again it is Quarto; and the double of that is Octavo; if they are folded still more there are other names—what I have written may serve to give you some idea.

To Correspondents and Readers.

The communications in No. 1 were from the pens of scholars in our school; the same may be said of those in the present No, except that of Sophia.

Amanda, promises to furnish us with an article every month, and there is reason to expect our paper will soon have a good deal in it sent from other schools.

If this paper is conducted properly it will become a class book in schools. It cannot fail but in two ways—in not having matter adapted to the various capacities, or in not having it properly arranged and suitably clothed. It will possess several advantages, should it not fail in the ways alluded to; it will come to schools in small portions at a time; there will be novelty and freshness in it. Not that it will contain original thoughts; they are rare in these times; but old ones may be presented in an agreeable and advantageous light; they may be made attractive by their relative positions and win that attention when dressed up by young people, for the inspection of young people, which under other circumstances, they could not do.

Who has not observed with what solicitude the politician watches the coming in of the mail which is to bring him the accustomed sheet, always containing matter he likes? I have no doubt but equal interest might be excited in the minds of scholars in well conducted juvenile periodicals, and I will leave it for others to determine whether it would not be at least as profitable, and as improving excitement.

COMMUNICATIONS.

Columbia.

Mr. Gilbert.

I think well of the proposal of your correspondent "Ann," in No. 1. and have no

doubt but it will be pleasing and useful to your readers, if others will do as she has done, that is, give a particular account of the place where they live. Her description of Lancaster was satisfactory to me though I have been in it; there is information in her article which I did not possess before.

But at the same time that I approve, I have my objections. She says that your city "does the principal business for some distance around, there being no other large town in the county." Perhaps I do not know the meaning of the word "large," but I should suppose she has used it rather carelessly; some people might be led to think that the other towns in the county were very trifling. This would be an error; for to say nothing of Strasburg, Marietta, and other places which are in the county, we should not like to be overlooked in our good town of Columbia. What! say nothing of a daily increasing Borough which has grown in an age to a population of thousands.* May we not speak of doing business, too, when probably, half the wheat flour, and lumber, which float down the noble Susquehanna, as far as here, stop with us? Who could see our large store houses filled at some times with the most necessary articles of living, and emptied as the demand requires, or our shores piled with lumber, taken away at the rate of fifty waggon loads a day, and say that Columbia is even the *second* business place in Lancaster county? Or if there is any merit in being wealthy, who will say that all this can be done without large capital? After thus correcting what I think Ann's error, I will describe our town.

Columbia is situated on the east side of Susquehanna river, forty miles from the head of tide water in Chesapeake bay, and seventy-four miles west of Philadelphia. The store houses and lumber yards are on the river bank, out of reach of the water, except in high freshets. As the scite is inclining, or sloping towards the water, a view of the river may be had from any part of the town. There are many good brick houses in the place, but the greater part are wooden or weather boarded.

A great number of labourers find employment in this town, and it does a fair proportion of mercantile business. Here the Pennsylvania Canal and rail road come together; the former ends in a large basin or reservoir, at the upper extremity from which the rail road extends to the lower extremity, where an inclined plane carries it to the summit level.

A good deal of attention is given to education; it is to be hoped there will be yet more, which will lead to improvement in the manner of teaching, as well as in the kind of learning chosen.

SOPHIA.

* It would be well for correspondents to give the exact population; it would not cause much trouble, and would be satisfactory.

Tea.

Mr. Editor,

Perhaps a short account of articles imported from other countries might be interesting to some of your readers. If you like them, and think fit to insert them in your paper, I may probably furnish you with an article or two, monthly, of such information as I can obtain, by comparing the accounts in my possession.

Tea is the leaves of a plant, which grows chiefly in China, Japan, and Siam. The leaves when matured, are an inch, or an inch and a half in length, of a glossy green colour, narrow, and serrated. The blossoms resemble the wild rose. There appears to be a difference of opinion whether there are several species of this plant, or whether all proceed from the same, only gathered at different periods of growth. When gathered and dried, they are moistened by the vapour of boiling water, and dried on plates of metal, exposed to great heat, which causes them to curl in the way we get them. Green tea it is said, is dried on plates of copper, to make it green. This kind will only grow in a stony soil, or at the foot of a mountain exposed to a southern sun. It is cultivated with success in the East and West Indies, and attempts have been made to raise it in Flor-

ida, and Louisiana, though at present it is not an article of trade, from either of the places.

It is propagated by seeds, and is not fit for use till the third year of its growth. When it attains to the age of seven years, it is five or six feet high, and as it then bears but few leaves, it is cut down, and the following year a much more abundant crop appears. Kaempfer states that there are three seasons for gathering; the first commences the latter end of February, or the beginning of March. These leaves are tender, because they are only three or four days old. This is called imperial, being reserved principally for the court, and nobles. It is gathered with great care, that it may not be broken. The second gathering takes place in the latter end of March, or early part of April; and though some of the leaves are done growing, and others have not attained to half their size, they are plucked at one time and assorted afterwards.

The third season commences in May or June, and is considered the coarsest kind.

AMANDA.

Industry.

We ought never to be idle; if we are not at work we ought to be reading, writing, or thinking. This would employ our time usefully. Look at the little bees; they are busy all day long, in collecting sweets; they fly from flower to flower, sucking up honey; they take it to their hives, and build their combs, to store it in.

The little birds are also engaged in summer in building their nests, and providing food for their young one.

The ants are equally industrious, so are all other living things, at their proper times; then why should not we, more especially, as by activity we can benefit ourselves and others?

NARIA.

Winter,

Is very disagreeable and cold. When the snow is on the ground, the sharp frost biting, and the cold wind blowing, it seems to penetrate our bodies. Every thing appears to be calm only the wind. The

birds are gone to warm countries, the snakes are sleeping in the ground, and the people are in their houses to protect themselves from the cold.

A. M. B.

Spring

Is delightful when the leaves appear, the blossoms come on the trees, and the different kinds of flowers are opened. When we arise in the morning out of our beds, and smell the rich odours, and hear the birds singing their sweet notes among the green branches, we feel rejoiced that spring is come again. We see every thing busily engaged at work; the birds building their nests to live in, and the bees, gathering their honey to live on in winter.

The people who live near the north pole have no Spring nor Autumn; they always have winter or Summer; or, perhaps it is better to say day and night, seeing the sun rises and sets to them, but once in the year.

ANN.

SELECTIONS.

Mr. Gilbert,

The article headed "I didn't think," in No. 1, reminded me of the account Dr. Franklin gives of one of his early errors, and the frequent use he made of it in after life. This copy is sent that you may lay it before your readers, if you think it will be useful or entertaining to them.

S. N.

The Whistle.

When I was a child about seven years of age, my friends, on a holyday, filled my pockets with halfpence. I went directly towards a shop where toys were sold for children; and being charmed with the sound of a whistle that I met by the way, in the hands of another boy, I voluntarily offered him all my money for it.

I then came home, and went whistling over the house, much pleased with my *whistle*, but disturbing all the family. My brothers, and sisters, and cousins, understanding the bargain I had made, told me I had given four times as much for it as it was worth. This put me in mind of the good

things I might have bought with the rest of the money: and they laughed at me so for my folly, that I cried with vexation.

My reflections on the subject gave me more chagrin than the *whistle* gave me pleasure. This little event, however, was afterwards of use to me, the impression continuing on my mind: so that often, when I was tempted to buy some unnecessary thing, I said to myself, *Do not give too much for the whistle*; and so I saved my money.

As I grew up, came into the world, and observed the actions of men, I thought I met with many, very many, who *gave too much for the whistle*.

When I saw any one too ambitious of court-favor, sacrificing his time in attendance on levees, his repose, his liberty, his virtue, and perhaps his friends, to attain it, I said to myself, *This man gives too much for his whistle*.

When I saw another fond of popularity, constantly employing himself in political bustles, neglecting his own affairs, and ruining them by that neglect: *He pays indeed, said I, too much for his whistle*.

If I knew a miser, who gave up every kind of comfortable living, all the pleasure of doing good to others, all the esteem of his fellow-citizens, and the joys of benevolent friendship, for the sake of accumulating wealth; *Poor man, said I you indeed, pay too much for your whistle*.

When I met a man of pleasure, sacrificing every laudable improvement of mind, or of fortune, to mere sensual gratifications; *Mistaken man! said I, you are providing pain for yourself, instead of pleasure; you give too much for your whistle*.

If I saw one fond of fine clothes, fine furniture, fine equipage, all above his fortune, for which he contracted debts, and ended his career in prison; *Alas! said I, he has paid dear, very dear for his whistle*.

In short, I conceived that great part of the miseries of mankind, are brought upon them by the false estimate they make of the value of things, and by their giving too much for their *whistles*.

The Empaled Butterfly.

BY MISS H. F. GOULD.

"Ho!" said a butterfly, "here am I,
Up in the air, who used to lie
Flat on the ground for the passers by
To treat with utter neglect;
And none will suspect that I am the same,
With a bright new coat, and a different
name:

The piece of nothingness whence I came
In me they'll never detect.

"That terrible night in the chrysalis,
That ushered me forth to a day like this
In the form of beauty—a state of bliss—

Was little enough to give
For freedom to range from bower to bower,
To flirt with the bird and flatter the flower,
And shine in the sunshine, hour by hour,
The envy of all that live.

"This is a world of curious things,
Where those who crawl, and those that
have wings,
Are ranked in the classes of beggars and
kings,

No matter how much the worth,
May be on the side of those who creep;
The vain, the light, and the bold will sweep
Others from notice, and proudly keep
Uppermost on the earth!

"Many a one that has loathed the sight
Of the piteous worm, will take delight
In welcoming me as I look so bright

In my new and beautiful dress,
Some I shall pass with a sorrowful glance,
Some with an elegant nonchalance—
And others will woo me till I advance
To give me a light caress."

"Ha!" said the pin, "you are just the one
Through which I'm commissioned at once
to run [done,
From back to breast, till, your wandering
Your beauty may all be known.
And when my point shall have reached
your heart,

"It will be a balm to the wounded part,
To think how you're to be copied by art,
And your form and your colors shown."

Evening at Home after going to School.

When my father comes home in the even-
ing from work,

Then I will get up on his knee,
And tell him how many fine things I have
learned,
And show him how good I can be

He'll hear what a number I know how to
count

I'll tell him what words I can spell,
And I hope, if I learn something every day
That ere long I shall read very well.

I'll say to him all the fine verses I know,
And tell him how kind we must be,
That we never must hurt poor dumb crea-
tures at all,
And he'll kiss me, and listen to me.

TERMS.

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but the work has commenced with very
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AUGUST, 1833.

No 3.

EDITORIAL.

To Parents and Teachers.

There are few persons who have not observed the difference between good and bad reading; but a still smaller number, I suspect, who have nicely observed what it is which constitutes the difference. It is common to say such a one "miscalls the words," or "he does not pronounce them distinctly;" again, "he reads too fast," or "he drawls." Another "does not mind the stops," or "he does not raise and lower his voice properly." Such remarks are common place; every one can make them; and they are true, but they do little toward improving the art of reading.

Why are the words miscalled by one reader? why does another articulate indistinctly? why does one read with such rapidity that the ear cannot distinguish between the end of a word and the beginning of that which follows it, or another so slowly that the memory is constantly exercised to retain the sounds, so as to make sense? Why is the punctuation overlooked? and why are emphasis and cadence placed injudiciously? The answer to all these questions is precisely the same; *The reader of it does not understand what he is reading.* There are degrees of excellence in every thing, and it is not to be expected that all intelligent persons shall read with equal taste, but he who understands what he reads, will make an attentive audience understand it; though he may not read elegantly, he will read intelligibly.

Were I asked "what course should be pursued to improve reading?" I would reply, "put no book into the hand of a child which he does not understand." I am aware it will be said, that we understand

nothing until it is presented to us, and that books are the mediums, through which much knowledge is brought before us. Admitted; but let us bear in mind it is not a knowledge of scientific or moral truth that we are now endeavoring to impart to the pupil; but the knowledge of an invented system of signs, by which he is presently to have access to the experience and opinions of others, to aid him in the acquisition of truth on subjects of high import. The only question is, whether he will obtain the requisite knowledge of these signs more readily when they are applied to things with which he is familiar, or to those of which he is ignorant. Take the case of a child who has never heard of a tiger but who sees horses daily; place before him H-o-r-s-e and T-i-g-e-r; tell him the one is the name of the animal with which he is so well acquainted, the other the name of an animal in Africa; which will he learn first? In one case he makes a mental association between the image of a known object, and its sign; in the other, there can be no such association. If this be so is it not emphatically so with abstractions, where there is no tangible object to refer to? and how little of the composition put into the hands of children, is clear of abstractions.

In a compilation for young readers, we find "The days that are past are gone forever; those that are to come may not come to us; the present time only is ours: Let us therefore, improve it as much as possible." This sentence contains three undeniable truths, of great moment to be borne in mind, and from intuition rather than logical deduction, urges in simple yet impressive terms, the solemn importance of reg-

ulating our lives accordingly. But is it suitable for learning the art of reading? Do the words refer to any prototype in the child's mind? Is there any sensible object to which he can attach the ideas? Is he capable of abstracting? If not, can he be interested with abstract truths, however interesting and pleasing to more mature minds? And can facility of acquisition be expected in the absence of interest?

I would propose as a substitute "A Zebra is about the size of a yearling colt, and is nearly of the same shape, but it is not all over of one color; it is striped with brown and white stripes beginning on its back and running down to its belly. It has narrow stripes of the same colors like rings, around its legs. After you learn to read this, you will know a Zebra if you see one, and you will be pleased to see it, for it is a very pretty little animal."

With me, there is nothing hypothetical in the mode here suggested. The advantages of having children learning to read in books which they understand, and with which they are pleased, has been an every day conviction for years, from that which came under my observation within the walls of a school room; I had one striking proof of it in my own family. My oldest daughter when a child, of say five years old, went to school long enough to spell words of three letters, when she was kept out for three weeks on account of sickness. I observed her one day with a three penny toy book, looking at the pictures, and trying to find out the relation between them, and the simple descriptions which were attached to them. Taking the hint, I sent for a dollar's worth of assorted toy books. I did not let her know of the stock on hand, but presenting the one which I thought best suited to her capacity, told her when she could "tell me the reading" in it, I would give her another. I do not now remember that she ever applied for assistance, and it was but a short time until the right of ownership, in the little library was transferred from me to her. That dollar was the exact cost of learning her to read "pretty little stories," neatly. From that time

until the present, it would have required her to make an exertion, to read any thing interesting to her, monotonously.

I very much incline to the opinion that the natural order of reading is inverted; but letting that pass; if children were made acquainted with the alphabetic characters, so as to know and name them at sight, and in addition to this had a little practice in combining their sounds; if we had picture books, with suitable reading appended to each cut, I know not why all children would not learn to read from mere curiosity, unless that curiosity were allayed or satisfied by unwisely placing variety at their disposal. If toy books are used as play things, or kept as part of the toy cabinet, the owners are all the worse for the possession. There is nothing more essential to be guarded against in a literary education, than the habit of turning over the leaves of a book with indifference; and the mere looking at pictures, is often the foundation for such habit.

To recapitulate; put the easiest, interesting lessons into the hands of those who are about to learn reading; excite in them a desire to know the contents of the book; get them to depend as much as possible upon themselves; induce them to give an account of what they read; keep every thing out of their way which is above their capacity, either in thought or diction, and there will be little difficulty in learning them to read. This course carried out until education is completed, would furnish the world with a generation of good readers, and if I mistake not, dispose them to be studious, enquiring men and women.

Geography.

GEORGE.—I have made both the experiments you directed, and I find that the board when held so as to face the sun, has more light upon it than when it is held slanting, or obliquely, I think you called it; the difference in the heat of the two slates was very perceivable. It was about noon that I tried it, the sun was shining brightly, and in half an hour that one which faced the sun became very warm.

while I could scarcely feel a change on the other. I know that both are facts, but I do not understand why one board is more enlightened, or one slate more heated than the other.

MARY.—I think I can explain it so that you will see very clearly how it is. Take this slate and draw a number of lines from the top to the bottom of it; take the ruler, draw them straight, parallel, and at equal distances from each other. Now draw a line from the right hand corner at the top of the slate, to the left hand corner at the bottom, or from the left hand corner at the top to the right hand corner at the bottom. Do you not see that the frame at the top and bottom crosses all the lines?

G. Yes.

M. Do you not also see that the slanting line which you have drawn does the same?

G. I do.

M. Measure the distance between two of the lines where they come up to the frame; now measure the distance between the same lines where the slanting line crosses them, and see if they are alike.

G. They are not, and I see how this fact will settle a dispute I heard some time ago, whether more grain would grow on a round hill, than would grow on the level it stands on, if the hill were removed; and whether it would require more pales to fence over the hill, than to make one across the plain if the hill were not there. It is very plain that if equal quantities of grain were sown in both cases, that the tops would be further apart on the hill than on the plain, though the stalks would be at equal distances from each other on any horizontal, or level line. The question of the pales is not different; they would be at equal distances from each other, that is, any thing which could be thrust between two of them in one case, would pass between them in the other, though the distance between them at the ends, would be greater on the hill than on the level.

M. Very well; I am pleased that you have made this application of the lines, for

though it is not directly to the purpose of our present enquiry, it proves that you are attentive, and it may serve to shew that the active mind not only finds the truths it is in search of, but many others of which it had no idea. There is such connexion and dependance in all useful knowledge, that while we are successfully pursuing one branch, almost without perceiving it, we become acquainted with others. But let us return to our subject. Hold this slate which is twelve inches long facing the sun. Let us suppose that all the heat thrown on it comes in one hundred and forty-four rays or lines. Now lean the slate backward until you can pass it between these two horizontal strings, which are four inches apart. Do you not perceive that forty-eight, or the third part of the rays, which before fell on the lower part of the slate, now pass under it? And the forty-eight, or third part that fell on the upper end, now pass over the slate.

G. I do; and as only the forty-eight, or third part, which before were on the middle division, or third part of the slate, are now spread over the whole of it, the rays must necessarily be three times as far asunder as they were before, and consequently the heat must be proportionably diminished. This is very plain; I wonder I did not think of it myself, and now I have the start, I shall be able to tell why it is so cold at the poles.

M. Well, let me hear if you can.

G. Perhaps I may not be able to do it immediately, but if I had some time to think of it, I am almost certain I could. It may be that the glimpse I have of it is very simple, and even without truth, but I will venture, and if I am wrong, you can set me right.

It is only directly under the sun that its rays fall perpendicularly, or straight down upon the earth. When the days and nights are equal, the sun is over the equator; there, the rays at that time, fall perpendicularly. Though the earth does not lean from the sun, yet its round form places the different parts of its surface in the same

state of inclination from the sun, that a board held under would be, placed parallel with those surfaces respectively.

M. I suppose you mean that if a board now lying on the level ground here, were carried on the same level, in an instant of time, over the equator, or, which is the same thing, under the sun, that the rays would fall on it in the same slant direction, in both cases.

G. Yes, that is my idea.

M. It is correct too; and simple as it is, it is the sole cause of the seasons, and the principal cause of all the varieties of climate. Of these we will speak another time. I would advise you, when you get a new idea to examine it well until you become familiar with it; this you can best do, if you do not crowd others along with it, whatever connexion there may appear to be between them.

Zoology.

The horse is an animal so common in many parts of the world, that almost every person thinks he knows all about him; this is a mistake; and like all other mistakes, would be corrected by observing and reading.

Of the horses which we have among us, some are large, big boned and strong; others are light slender and active.

Though there is so much difference in the size and form of these creatures, they are all of the same kind or species—they are alike in those things by which animals are classed; they live upon the same kind of food, and they breed together. The principal differences depend upon the climate, the manner of feeding, and the stock they come from.

In Arabia, where they have the swiftest horses in the world, they breed none but slender horses; these they feed and nurse with great care; and they never load them heavily, or make them draw loads; all they want from the animal is beauty and fleetness.

In some parts of Europe and America, they want animals of great strength, but care not whether they are active; they

cause them to draw heavy loads, but do not wish them to move fast; this kind of horse is also well fed, and attended. All other domestic or tame horses partake of the appearance of these two kinds, and are also between them in the uses for which they are kept. They are not so strong as the one, nor so swift as the other, but have strength and speed sufficient for all common purposes, and are used either to carry or draw burdens. They are in general more useful than either of the others, as the same animal can do either kind of work.

Those called common, or scrub horses, are well or ill used, according as their owners are kind or otherwise. One would think that a man would always treat a poor animal well, who patiently does that for him which he cannot do for himself, and which he cannot do without; but it is not so; many of them are poorly fed, driven, or ridden hard, and cruelly beaten.

They have thought it necessary in some places to make laws to prevent cruelty to horses.

In S. America, horses are wild, they are mostly of a middling size, and beautifully spotted. They keep together in droves of several hundred, and while the company is feeding, some of them stand at a distance, on every side, to watch if any thing comes to hurt or disturb them. When they see an enemy, they snort very loud, and the drove runs off directly from the place where they hear the snorting.

The horse is considered the handsomest of all quadrupeds. His straight fine legs are well suited to the size of his body, which is round and well formed. He carries his head high, and his flowing mane and bushy tail are very ornamental. His hoofs are in one piece, and are thick at the edges that nails may be driven into them, by which shoes can be fastened on, to save his feet.

A draft horse can draw thirty hundred weight on a good road, though this is a common load for four. With this load they can travel 20, or 25 miles in a day. A horse power is counted equal to that of five men. A riding horse will carry a common man

40 miles in a day when the roads are good. Horses have four gaits. A walk, pace, trot, canter or gallop. In walking and trotting, they move the right fore, and left hind foot at the same time, and the left fore, and right hind foot in turn; in pacing, they move a side at a time; and in galloping, they reach forward with both fore feet, and then follow up with the hind ones. A very fleet horse can gallop, or run a mile in a little more than a minute. The common age of this animal, is about 20 years. After death he is of no use in civilized countries, except for his skin, out of which a pretty but spongy leather is made.

The way to correct wrong Opinions.

In the writings of Maria Edgeworth, an English woman, there is a great deal which is useful, and pleasing too. As our paper is so small we cannot extract as much from her works as would be agreeable to our readers who have not seen them, they must therefore put up with having some of the interesting parts taken out, and made shorter.

She tells a tale of little Rosamond who was sitting with her mother one morning, when an old lady, an intimate acquaintance of her mother came in. It seems Rosamond had not seen her mother's valued friend before. The two women talked together in a social manner for some time; at parting the visitor invited Rosamond's mother to come and see her, and to bring her daughter along, which she engaged to do.

After the lady was gone, Rosamond took early occasion to tell her mother she was sorry she had accepted the invitation, for she had taken a dislike to the old lady during her visit, which was so great that it would be very unpleasant to her to be of the party when visiting day came.

Her mother said she would not insist upon her going along, if it were contrary to her wish, though she was utterly at a loss to find any reason for the dislike she spoke of,

Rosamond seemed desirous to avoid an examination into the cause, and to pass it off by saying "I have no *particular* reason.

The mother unwilling that her daughter should form opinions, without knowledge to begin with, reminded her that she had not seen the lady before, and that unless there had been something in her conduct during her visit, which was improper, her dislike was unreasonable. The little girl had nothing to remark, which was improper in the lady's conduct, and was obliged at last to say that her dislike to the woman, was partly on account of an accidental pinch or bend in her bonnet; and partly because she had a crooked scarred hand.

Her mother acknowledged, the defect in the bonnet was a good reason why she should not be pleased with it, but she doubted whether it was a sufficient reason for disliking the *wearer* of it. She led Rosamond to enquire how the lady's hand became thus deformed; she was told that she had burned it in saving a little child from being burned to death; that she was such a wise, cool headed person, that she had presence of mind enough to roll the child in a hearth rug and smother the flames, when all the others present were unable to think of any way to relieve her; that she was so benevolent as to risk her own life to save the child, who but for her must have perished; and so intent upon relieving the little sufferer, that she did not perceive she was injured herself, until the doctor had done every thing he could to make the child comfortable—then it was, she found she would have to lose one of her fingers, and pretty much, the use of her hand.

It may well be supposed that the little girl would herself discover the wrong she had done so virtuous a person, nor did she wait for her mother to speak of it, with honest frankness, she blamed herself for being so silly, as to be influenced in her feeling toward a person on account of dress, and for being so unjust as to dislike a person for that, which when she knew all about it, made the lady the subject of her

approbation and admiration. When people see of themselves the unhappy consequences of precipitancy in every thing, they become cautious; and when they see the injustice of antipathies, they do nothing to encourage them. But they must see and feel it themselves, others cannot do it for them.

The three Kingdoms.

Men have found it convenient to class things; that is to observe what substances are alike in some of their leading, or most obvious properties, or appearances, and then call them by a general name. A class may be divided or subdivided according to the characteristic or particular differences of the substances which belong to it; these are called genus, species, &c.

The first great division of all that we see, is into Mineral, Vegetable, and Animal.

All that which properly belongs to the globe of the earth and which must be found under its surface pertains to the mineral kingdom; hence all rocks, stones, pebbles, clays, and metals, are minerals. Many of these act upon each other, and are acted upon by heat and water so as to undergo many changes; indeed it would seem from the observations which men have made, that there is unceasing change in the matter of which the earth is composed. Some rocks, for example, which are composed of different materials are decomposing or dissolving; their hardest parts forming masses of greater hardness and their soft parts making bodies softer than the rock of which they make a part.

That by which the particles are made to adhere together is called the attraction of cohesion, which means nothing more than a tendency in them to stick together, and that there is such tendency is only known by the fact that they do thus stick or adhere.

Minerals are not known to have any circulation or motion of their parts, or any thing to nourish them, and promote their growth, and therefore men do not speak of

the life of minerals they are called lifeless matter.

Vegetables have organs; that is roots stalks, leaves &c; through these they take in water, air, and other matters which are somehow changed within the plant, so as to afford it nourishment, and promote its growth. Only a part of the air, water and other things taken in by the organs, are found in the plant, in the state they were in when they entered it. Because vegetables have organs, and that those of the same kind require the same kind of nourishment, and take the same form, they are called organic bodies.

Though they feed and grow, they do not feel, that we can perceive.

Animals too have organs, but different from vegetables; generally they take in their food by the mouth; and in the stomach it undergoes a preparation for nourishing their bodies, and promoting their growth. This preparation is called digestion.

Minerals then, are masses of the same or different kinds of matter adhering together without sense, or life, or motion that we know of.

Their increase does not appear to be the effect of nutrition, but mere cohesion, or aggregation.

A vegetable, seems to be a sort of workshop, called laboratory, where whatever is taken in, is manufactured, or fitted for the use of the plant; it does not leave its place to find nourishment.

Animals are as insensible of the processes of digestion, circulation, and nutrition, which are going on within them, as vegetables can be, and have as little control over these operations, but they have to choose and procure the food which is necessary to keep them going on. An animal then is an existence which has life; which feeds, grows, feels, and moves about of itself. In addition, to these, some animals do that which you are now doing—they think.

Whether there is thought wherever there is animated matter, has been the cause of much dispute, and men have not

yet agreed about it. Perhaps it would be better for them to spend their time in search of that which they *can know*, and which, when known, will be of use to them. A sweet poet has said that it is a poor business to pass our lives, "dropping buckets into empty wells, and drawing nothing up."

Elementary Principles.

The right way to go about getting knowledge, is to study elementary principles. The readers of the Inciter may not all know what is meant by these words; they would not have been used here, but that you will often see and hear them, and must therefore learn the meaning of them; besides, when they are understood, they are very suitable words.

Elementary principles then, are first simple truths. Any fact is a truth, and any thing is a fact which does exist, or which did happen. Now we have no way to know these facts but through our senses. Our senses are sight, hearing, tasting, smelling and feeling; any thing that we cannot see, hear, taste, smell, or feel, we cannot know. When we see a horse or a house; hear a gun or a violin; taste an apple or an orange; smell a rose or a pomegranate; feel a piece of silk or of ice, we always know it; it produces in us what is called an idea; we can think of the things we saw, heard, tasted, smelled, or felt afterwards; if we could not do so, our senses would be of very little use to us. As it is, by thus seeing, hearing &c. that we get our ideas, the elementary principles of all knowledge, we should make good use of them. Whenever we wish to become acquainted with something which is new to us, we should examine it with great care; we should find out whether it is an animated or living thing. If it is, whether it belongs to the land, the water, or the air; whether it has four, two, many, or no legs; whether it is covered with hair, wool, feathers, scales, or only skin; whether it runs, flies, swims, or crawls; in a word, we should find out in what it is different from other living things which we

have seen, as well as in what it is like them.

If it is an inanimate or dead thing, take notice of its shape, whether it is round or straight, or both; whether it is hard or soft; transparent or opaque, with the colour or smell, and any thing in which it is different from other bodies, or like them.

People who examine things in this way, are apt to remember what they have examined; they retain or keep the ideas which they get, and this makes them knowing; if they can tell it well to others, and give them correct ideas of whatever they have seen, they may be useful, for though no one can give his knowledge to another, yet he may talk about it in such a way that the other will feel a desire to get knowledge for himself; he may wish to examine the things, and get ideas of his own, in the same way the speaker got his.

That which you have just been requested to do, is called observation, or observing, and as has been said, it is by this that we get images, or ideas in the mind. Examining two, or more of these images or ideas when the things which produced them are not present, is called comparing; putting them together in order, is called combining, and comparing and combining, is thinking.

Perhaps you now understand what is meant by the Elementary principles of knowledge.

But these words have other uses. Men speak of the elementary principles of bodies or substances. Every thing is a body or a substance, which occupies space; that is, which takes up room. You cannot put a thing in the place where another thing is. Every thing which occupies space is matter, and matter is made up of the elementary principles.

There is a branch of learning called chemistry, by which men get to know what these elementary principles of matter are. Perhaps they do not know certainly how many there are, but they have not been able so far, to find out more than about fifty. Some of these you know, such as gold, silver, iron, and copper, which are called metals; flint, lime and clay, called

earths. There are other metals and earths which are not so common, have long names and are of less use. Besides these, there are gasses, or different kinds of air, which though we cannot see them, exist in plenty, and are to be found every where, such as oxygen, hydrogen, and nitrogen.

Out of these fifty elementary principles, some of which have just been named, every thing which we see, hear, taste, smell, or feel is made. It may seem strange to you that all the variety of animals, trees, plants, stones, and soils, in a word, all that is on or in our earth, should come from only fifty different simple materials; yet so it is. It may seem equally strange, when you are informed that putting some materials together in different proportions, should make bodies very unlike each other.

Every one has seen iron and charcoal; the steel in a knife blade, and the marking substance in a black lead pencil, are both made out of iron and charcoal; the only difference between them is, that the steel has more iron than black lead, as it is called, and lead more charcoal than steel. It may surprise you to hear that the soft, sweet, beautifully coloured rose, and the rough, homely-bark of the black oak tree, are made of the same elementary principles, combined together in different proportions; and perhaps you scarcely believe that you yourselves, are partly made of iron and lime, and yet, if you learn chemistry, you will find your blood contains iron, and that your bones, teeth, nails, and hair, are principally made of lime.

Oil Painting, and Varnishing.

A correspondent has furnished an article on oil painting and varnishing. It is too long for the room we have to spare and I will try to give an idea of the process described by the writer without going into particulars.

The first thing done is to get a firm body on the surface to be painted, by putting on it several coats, one after the other, of white lead, mixed with lamp black, letting each one get quite dry before another is put on. If there are any holes, or

uneven places they are filled with putty and japan. The whole surface is next rubbed with pumice stone and water, until all roughness disappears, when from three to six coats, of the colour intended, are laid on in succession; these are ground very fine, and put on with great care, having the work perfectly dry at each time and previously smoothed off with pumice stone, if necessary. Lastly it is varnished with as many coats as are found necessary to give the job that appearance which satisfies the artist or his employer. Here too the pumice stone is employed, and for the final finish, rotten stone on a cloth. By these means, handsome coach and gig bodies are made to have such a fine polish.

Grammar.

I suppose the greater part of our readers are learning, or have learned grammar; the study of it, as it is called, has become so common, that it almost amounts to an affront, to suppose it has been neglected. I learned grammar myself, and I have been teaching others what I know of it these twenty years. Whether it is that I do not know how to make the most advantage of this science, or whether it is not in itself so valuable as we might suppose from its general introduction, I shall not now discuss; one thing I know, respecting it, that I do not remember to have recurred to it, either in speaking or writing, these ten years. For whatever there may be of correctness in my communications, I am more indebted to the reading of good composition, than to any knowledge of grammar rules. The style of the authors I read formed my taste, and habit confirmed it.

But grammar is taught, and will be taught in schools, so long as the fashion requires it, and I have no objection to make; I advise those however who are studying it, to pass nothing over without understanding it fully.

Enquire of the teacher what precise ideas are attached to its terms. Ask him not only what offices Articles, Adjectives, Adverbs, Participles, and Prepositions, perform in sentences, but what is the precise

meaning of each of those words; the same of all other grammar technicals.

Do not be satisfied with knowing the meaning of the words Article, &c, but be sure to know the meanings of the words which are classed under their respective heads, in the sentence which you parse. You can scarcely get a worse habit in learning, than that of carelessly passing over words without an accurate knowledge of their definitions.

In the case of Nouns, Pronouns, and Verbs, the suggestions here offered do not apply; the two first being names, reference can be made to the things, of which they are the names. Verbs are the names of actions, and we have to refer to the actions, to know the meaning of the words in this class.

Where we are acquainted with a thing, and know its name, (dog, for example;) or when we have performed an action, or seen others perform it, (as walking,) the thing, or the action brings the name to our recollection, or the name makes us remember the thing or the action; no definition is necessary in either case; but this is because we have already learned it though perhaps we know not when; for if we were to hear of some unknown agent, performing some unknown action, the names of both would give us no clear ideas; both the agent and the action would have to be described before we could comprehend any thing of either.

Philosophical Temper.

Sir Isaac Newton, one day left his study, with his favorite little dog in it. On his return he found the dog had thrown down a lighted candle which had consumed some highly valuable papers. Looking at the animal he said "Oh, Diamond! Diamond! thou little knowest the mischief thou hast done," and resumed his labours.

Congenial Souls.

Howard, the Philanthropist, finding at the end of the year, that there was an unspent balance of his income, proposed to his wife to spend it in a visit to London, or

some other amusement. "What a pretty cottage it would build for a poor family," said she. The money was thus appropriated.

If we consider how much the comfort or the uneasiness of all around us depends on the state of our own temper, we should surely endeavor to render it sweet and accommodating.

A Correction.

In No 2 it was stated that all the clergymen in this city had been waited on with the Inciter. This needs correction; I did not know of all the clergymen resident in the city; there may be some to whom I have not yet been introduced. I waited on two since that article was written, one of whom spoke more approvingly than any had done before him; the other, who I am told is very learned, and has given much attention to education, made some concise, but decided objections to the Inciter, but did he say any thing in favor of the design or execution of the work. If I heard him distinctly, he said the mode suggested for teaching arithmetic is faulty; he did not point out in what it is defective, but passed on to make some strictures on the proposal to employ students in writing their own observations and thoughts. He said they would never learn to form elegant characters in this way,—that the most which can be anticipated is the "acquisition of a business hand;"—that in England they have found it expedient to connect letters together which do not spell words, and to have these for copies.

This is on the principle that the learner shall have but one idea in his mind when writing—the idea of forming handsome characters, which the Rev. gentleman says, can only be done by imitation. He says further that there is a risk of exciting feelings of vanity in the mind of a boy by teaching him to look to his own resources; he should feel the need of his preceptor's instructions, pay due deference to him, and not rely upon himself before experience has made him wise.

I regretted that the gentleman had engagements which did not permit him to exhibit his views fully before me, and expected him to propose doing it at another time—he did not, and he is hereby informed that the columns of the *Inciter* are open for the detection and exposure of its own errors.

COMMUNICATIONS.

Astronomy.

Friend Gilbert,

I was satisfied with your article on astronomy in No 2, and think your readers will be pleased to have more on the same subject. If you think the following suitable, you may publish it as a conversation between my little brother Charles and myself.

JANE.

CHARLES.—Sister, I have been thinking of what you told me about the shape of the earth, and its motion round the sun, and I believe it is all so. I have been turning the ball of yarn, with the knitting needle running through it, before the candle until I think I understand the cause of day and night very well; I can see plainly that when it is noon to the people on one side, it must be midnight to those on the opposite side, and that as the sun is rising to the inhabitants of any part of the world, it must be setting to their antipodes who are exactly opposite to them. You spoke to me of the change of the seasons, winter, summer, &c. and I have been trying to give the ball a motion which would show me how that is, but I believe I shall not be able to do it without your assistance.

JANE.—I supposed that to be the object you had in view for several evenings past, and though I could have said a few words frequently, which would have put you in the way of seeing what you were looking for, I thought it best to let you pursue your studies without interruption. If those who are industriously engaged in study, do not find what they are seeking, they mostly make some useful discovery; and even when they do not, the time is not lost

for without knowing it, they have learned to examine and think better than they did before.

C. I know that is so. I can keep my mind on my studies much better than I could when I began, and I can find out things which are quite new to me, much easier than I could then. Every thing I am learning is easier to me than it was in the beginning, although it is all as new to me now, as what I was then learning was at that time. Can you tell me how this is sister?

J. I think I can. Once you could not write; now you write a fair hand. Once you could not make a pen; now you make your own pens. When you began both, you found great difficulty; now you can do both with ease; and yet you scarcely knew at any time that you were improving. It is likely that your judgment, and the power of moving the muscles of your arm and fingers, improved every time you exercised them, but it was so little as to escape your notice; all these unperceived gains make up the stock of your present acquirements; and though you never formed two letters precisely alike, or drew the pen in exactly the same direction, yet you have learned the control of your muscles—you have not only acquired a taste in forms, but by repeated efforts you have learned to make them; you have the habit of writing. If you had heard penmen speaking of their art, or even had you seen them practising it, through all the time you have been learning, I suspect you would form a poor letter, if I were now to put a pen in your hand for the first time. As I understand thinking, it is as much an art as writing, and can only be acquired by exercise. By application we learn to think—we get the habit of thinking, and it becomes easy to us.

C. Are you ready to explain to me the change of seasons?

J. Yes. You know that the path, or track, in which the Earth moves around the Sun, is called its orbit; and an imaginary line passing through the earth from

north to south, represented by the knitting needle in the ball, is its axis; you know also that when two sticks or strings, are placed across each other, so as to make square corners where they cross, they are said to be at right angles.

C. Yes; I know all this.

J. Bring me a loose hoop of a flour or cider barrel; I will, in the mean time, light a candle.

We will take these two blocks, which you see are nearly the height of the candle, and placing them the diameter of the hoop apart, we will lay the hoop on them, thus: Put the candle in the centre. Now take one end of the needle, (which you may call the north pole) in your hand, and bringing the bulge, or middle of the ball to the hoop; pass it round so that the ball shall make a revolution, around the candle.

Do it with more exactness; keep the middle of the ball on the middle of the hoop, and let the needle be perpendicular in every part of the revolution. Do you not perceive that the needle, or axis, is at right angles with the plane of the hoop in every part of the revolution?

C. I can see that it is so.

J. The next thing I wish you to observe is, that the light of the candle goes as far over the ball as the needle or north pole, and as far under it as the other end of the needle, or south pole.

C. I see it is so, though it is less bright there, than on the side next to the candle.

J. The light is not more faint at the poles, than on all other parts of the ball equally distant from the candle. I think you may see by this experiment, that if the Earth's axis were at right angles with the plane of its orbit, there could be no change of seasons on any part of the globe; that the people at the equator would always see the sun rise in the east, pass directly over their heads at noon, and set in the west. They would see the sun one half the time, and have twilight and darkness the other half. The people at the poles would always see the sun at their horizon. The intermediate inhabitants

would have their days and nights of unequal lengths.

C. This is all very plain.

J. We will now remove the blocks on which the hoop rests, and supply their places with two others, the one a few inches higher, and the other as much lower, than the flame of the candle. You perceive the hoop lies slantwise, or out of level.

If you will take up your ball and make a revolution with it, precisely as you did before, that is holding the axis perpendicularly, keep the swell of the ball in contact with the middle of the hoop, you will have an opportunity of observing whether the poles are alike situated with respect to the candle, when the ball is at the high block, and the low one.

C. They are not; now, when the ball is at the high block, the light of the candle does not reach the north pole, but it shines beyond the south pole; and now when the ball is at the low block, just the contrary is the case. This explains very satisfactorily why at the poles there are six months of day, and six months of night; and that while there is day at one there must be night at the other; and now I have the idea clearly that the inclination, or obliquity of the earth's axis, to the plane of its orbit, places us in different situations with relation to the sun, in different parts of our journey around it. I will try how it is when the ball is half way between the high and low parts of the hoop, for I suspect that is our situation when the days and nights are equal. It is even so; the light passes to both poles and no further.

Thank you, my dear sister, I think I can do without any further assistance, for though I have only learned two or three facts, and they are so new to me that I hardly know how to apply them, yet when I am left alone, I can try the thing over and over again. I will look at the light on the ball at different parts of the hoop, and think how it is with the earth receiving its light from the sun, in the same positions. I can understand things better, when I *think* them out, in my own slow way, without any other persons thoughts.

mixed with my own; besides I remember them better.

Coffee.

This article of which so much use is made, is the seed of an evergreen shrub which is cultivated in hot climates. That which we import, is principally from the West Indies. In Arabia, the shrub grows to the height of twenty feet, having leaves of four or five inches long, though in the West India islands it is smaller. The leaves are broad, smooth, green, and glossy, on the upper side; and the flowers which grow in bunches at the base of the leaves, are white and sweet scented. The berries or fruit, are of an oval shape about the size of a cherry, and of a dark red color when ripe. Two grains of coffee are in one berry with the flat sides together; they are nicely enclosed with a delicate husk or coating.

In Arabia, great attention is paid to the culture of coffee; they plant it on sloping grounds where they water and shade it, if the situation is dry and hot. When the berries are removed from the trees, and dried, they pass them between rollers to break the husk, which is winnowed or blown away. After another drying it is fit for use or exportation.

It is believed that the use of coffee was not known to the Greeks and Romans. It is stated to have been introduced into Constantinople in 1554; taken to England almost a century after, and twenty years after that came into use in France. The first Coffee house, is said to have been established in Paris, and was probably a place where gentlemen met to regale themselves socially over a new and fashionable beverage.

The Mahometans, who abstain from wine, drink coffee to excess. They take it several times in the day, strong, hot and without sugar.

AMANDA.

Philadelphia,

Is situated between the Delaware and Schuylkill, six miles above their conflu-

ence, in Philadelphia county, and one hundred and twenty-six miles from the Atlantic, by the course of the river and bay.

It is ranked in the fifth class of cities, and contains one hundred and sixty-six thousand inhabitants. It is distinguished for the beautiful plan on which it is laid out. Almost all of the streets intersect each other at right angles.

The direction of the streets affording a free circulation of air, and the cleansing rules of the city being very good, it is perhaps the most healthy city in the United States.

Besides being the second city in population, it is the first manufacturing city in the Union. It has several large public squares which embellish it greatly, and afford fine promenades.

It has some fine edifices among which are the new Mint, the United States bank; and the old State House in Chesnut street, is probably the most celebrated building in the United States. In it the Declaration of Independence was signed.

Fairmount, on the banks of the Schuylkill, is the scite of the water works which supply all the city with water.

The water is forced from the Schuylkill through large iron pipes into the basin, at the summit of a bold elevation, by powerful iron machinery. From the basin there are other pipes running to every part of the city, imbedded in the ground perhaps four feet deep. The surface of the water in the basin is as high as an ordinary house in any part of the city; therefore all the citizens can be supplied with wholesome water by merely opening a stop-cock.

At Kensington in the neighborhood of the city, stands a neat little monument, on the scite of the elm tree, under which the famous treaty between Penn and the Indians was made.

Those who are acquainted with the history of political negotiations and their results cannot avoid reflections highly creditable to those august politicians whose deliberations were conducted under the wide spread foliage of the celebrated elm on Delaware's banks; whose contracts were

afterwards fulfilled, without breach of faith, or loss of blood.

The inscriptions on the monument, state these facts laconically but truly.

F. F.

Scholars from different Schools.

L. Oh, how glad I am, there is no school for three weeks.

H. And I am very sorry, I am already lonesome and tired.

L. You must love school better than play.

H. I do; I am hardly ever contented without I am learning something.

L. And I am not contented when I am learning.

H. Why not? do you not wish to grow wiser, and know more than you know now?

L. I would, if I could learn it all at once.

H. That is impossible. You must take pains and try to understand what you learn.

L. I can't understand; it is too hard.

H. What book do you read in?

L. The English Reader.

H. I know the reason now, why you do not like to go to school.

L. What is the reason?

H. Because the English Reader is too hard for you to understand, and you get discouraged.

L. I do; and if I could have something I understand, I think I should like to read better.

H. It is all important for you to understand what you read; and then you will not get discouraged.

L. I think I will read in an easier book, and try how it will go then.

H. Why I would advise you to do so, then I dare say you would take delight in reading.

L. But after all I think I can read well enough.

H. You may be mistaken in that; reading is the main object.

L. I can write too, but I soon get tired of that.

H. Do you write copies?

L. Yes.

H. Then it is no wonder you get tired;

would it not be as well for you to compose something.

L. I don't know what to write about.

H. Any thing that comes into your mind. Could you not write that a cow has four legs, and two horns, and is very useful on account of her milk &c. as well as to write a copy over and over a dozen times?

L. I think I could give a description of a cow, and it might improve my writing as well as the other.

H. Not only so, it would learn you to think about what you write, and you would soon learn to compose any other thing.

L. It may be that you are right, and I will go straight home and try if I can't give a description of a cow, and improve my time better than I have done several ways.

R.

Relative importance of Duties.

Being at the house of a friend not long since on an evening's visit, the conversation turned on education. When I left him to return home, he handed me the first number of the Inciter, and requested me to read it carefully, saying it contained some valuable articles. I have given it a reading and think well of it, especially the dialogues. Children read dialogues with more interest than any other kind of writing, and of course are more likely to understand what they read.

I offer for publication the result of an interview between two of my neighbors, on the subject of educating the rising generation. It might suit some readers. It was nearly after this manner.

C. Will you walk with me to our school and see how the scholars progress with their studies.

F. I have more important business that needs my attention; and if we were to go, the children would be none the wiser.

C. So, you have business that is of more importance than the education of your children! that is indeed singular. And you say the children would be none the wiser. In this you and I differ widely.

I think it encourages the children, and assists the teacher.

F. Assists the teacher! what can you mean? Is not the teacher qualified for his business? What could we do to aid him?

C. Notwithstanding he is a teacher, we may know things that he does not, and things too, that every child ought to have a knowledge of.

F. Well if we even could render him assistance, I would not go. You must know I pay the quarter bills, as soon as they become due, and this I do to compensate another for educating my children, then why spend my time in assisting him?

C. If one of your journeymen is at a loss about his work, I suppose you are willing to spend your time in showing him how to do it.

F. Yes, but this is not lost time, inasmuch as it enables him to get along better afterwards.

C. Then you count the time given to the journeymen as clear gain, whereas that bestowed on the education of your children, is dead loss.

Am I to understand that you attend to every thing which concerns you, except the education of your children? and that you think you have done your duty when you entrust that solely to another.

Really you must place confidence in a teacher, to permit him to go on month after month, in educating your children, without knowing how he is doing it. I doubt whether you have had a journeyman that you could thus confide in, even though he deserves the character of a first rate workman. I have heard of some who were attentive to the mint and cummin while they neglected weightier matters. K.

Fact.

It is a fact worth noticing that every man who carries a watch on a sunny day, has a ready and efficient means for obtaining fire. When the sun is near its meridian height, if the crystal of a watch be opened and filled with water, it forms a plano-convex lens, bringing the solar rays to a focus,

which being thrown on a dark colored combustible body, will cause it to take fire.

J. M.

SELECTIONS.

If scholars cannot understand the following from the Northampton Courier, intelligent, serious parents can. If it has nothing to favour their *party politics*, it has that which is better for the *true interests of the human family*. Let us ask ourselves why we do not see more paragraphs containing such inculcations.—Ep.

MORAL INFLUENCES.—We believe that there is much truth and justice in the remark, that other influences beyond that of force, must be exercised to keep the Union of these states permanently together.—Statutes may be enacted, constitutions framed and interests multiplied but if there is not a primary feeling of moral obligation and fraternal duty, to cement and enforce them, the duration of this government, like all others, is extremely questionable and uncertain. Pecuniary interest and common defence and general prosperity are but transient ties which can be thrown off to suit the excited spirit of the times or changed to meet any pressing emergency. They are but selfish bonds, which yield at the rude touch of popular disaffection and are easily rent by the misguided voice of public sentiment and vindictiveness and clamor. But if legal enactments and obligations, and physical wants and common defence do not constitute security against dissolution, what influences can be exerted to sustain and strengthen a civil compact of such stupendous weight and importance as our own? If these things fail what iron will enter the souls of men, to enforce their high obligations and to impress upon them the maxim of "union" with certain safety and security? We think a moral obligation and religious feeling and fraternal affection, which is founded in the heart and has its emanations from the soul, if rightly cultivated will insure this purpose and guarantee its permanent duration. Some deep, abiding sentiment, some strong affection of the

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EDITORIAL.

TO PARENTS.

Misrepresentation and Deception.

There is not a habit of more importance in every stage and scene of life than that of strict adherence to truth. Though no one fails to discern, or is backward to reprehend gross lying; few, it may be feared, are sufficiently careful in guarding against those slight aberrations from truth, which lead directly to it.

Could a parent hope that his child would be an economist, however highly he might extol his economy, however his example might comport with his precepts in large matters, if in small ones he were wasteful and negligent? If he be even niggardly with barrels of flour, or dollars, but wasteful and indifferent with handfuls and cents, and encouraged his son to be so, should he accumulate, it must be attributed to something distinct from economy. Just so it is with truth, we need not expect to find the love of it, unless due value be attached to it in small portions.

Is the course pursued in very infancy calculated to inspire the young mind with regard for truth? Is not the infant told if he puts his hand into the saucer of hot coffee that the bird, dog or cat which he sees pictured at the bottom, will bite him? Is he not told, now that the naughty table, chair &c. which has hurt him has been beaten it will not repeat the injury? To say nothing of the revengeful feeling which such a course tends to promote, it must so far as it has any effect, prevent the proper distinction in the young mind between truth and its opposite.

However convenient parents or nurses

may find it to misrepresent to answer some present purpose, and however little importance they may attach to the consequences of deception and misrepresentation at so early a period, observation and reflection would change their opinions; they would perceive that "Little things are *great* to little minds."

A story is related of a child who would not permit the surgeon's instrument to enter his mouth for the extraction of his tooth. When reasoning and persuasion had been unsuccessfully resorted to, the surgeon desired to see the tooth, to rub it with his handkerchief, and hoped it would supersede the necessity of extraction. The child had no objection to this; and while the operator professed to be rubbing the tooth, he was adjusting the instrument, which he had previously concealed beneath the handkerchief. The tooth was extracted and a physical benefit derived; it is a question well worth investigating, whether the loss in a moral point of view, was not more than equivalent.

"Take it my dear," said a fond mother to her little son, to whom she was endeavoring to administer some nauseous medicine, "Take it, it does not taste bad at all; I would take any quantity of it." The child did not believe her; he had heard the same tale before; she had abused his confidence, and of course had lost it. A bystander took the cup containing the bitter draught,—he tasted it—he said it was very ill-tasted, indeed. Addressing himself to the little patient "It has a very bad taste, but do you not think you have resolution enough to drink it down, since it is expected to be useful to you? It is indeed bad tasted stuff, still I think you could take it.

The child made an effort and drank it down.

The address of the surgeon might be much admired by the parent, who, having no control over his child, was forced to resort to artifice to procure a benefit for him; but how is it in a moral point of view? Is the child to infer from this treatment that those who profess to be his best friends, are ready to impose upon his credulity whenever they may chance to think it will be advantageous to him to be deceived? From the example of his parents is he to infer that there is no wrong in misrepresentation and deception?

Let every reflecting parent contrast the conduct of the surgeon with the by-stander in the anecdote, and if I mistake not he will find himself confirmed in the belief that a conscientious, manly, undeviating adherence to truth should be inculcated by precept, and especially by example.

Geography.

MARY.—Well George have you been thinking about the obliquity of the sun's rays since our last interview?

GEORGE.—Yes; and though I did not then understand you when you said that this obliquity caused the seasons, I understand it now; I have made the experiment spoken of in the "Inciter" of August, under the head of Astronomy, and have fully satisfied myself how it is that when we, here on the 40 deg. of North latitude have the coldest weather, they on the 40 deg. of South latitude have the hottest, and the contrary. The ball, knitting needle, hoop and candle, may be so managed as to make it plain to the youngest scholar in our school, I should think. But why is that experiment placed under the head of Astronomy? I should have thought it belonged to Geography, as it is about the earth.

M. Your query is a very natural one. Astronomy, is knowledge of the heavenly bodies; Geography, is knowledge of the earth. I told you when we were last together that there is a connexion between all the sciences; Geography is inseparably connected with Astronomy, for though we might measure the distance from one

place to another without reference to any body but the earth, yet when we think of climate, productions, animals, &c. together with the habits and pursuits of men, all dependant on climate, we necessarily think of the relation of our planet to the sun; and when we think of them together, it is rather difficult to tell under which head to class our thoughts.

G. You hinted to me the other day, that there are other causes for the variety of climate besides the direction in which the sun's rays fall upon the earth; you seemed to think it was not best to tell me of them at that time, lest too many new things might confuse my thoughts. I believe there is no danger of that now, for I have made experiments, and thought about them, until my thoughts go further than my reading.

M. I hope you will be careful not to let them go too far ahead of your knowledge; so long as you confine them to plain obvious inferences from the facts which you observe in your experiments, all will do well; if you leave these out of sight you may wander without a guide.—But I will proceed to tell you, or rather lead you to consider some of the other assigned causes of climate. You have noticed no doubt, that vegetables cannot grow without a certain degree of warmth; and that however hot the weather, a thriving vegetable never feels hot.

G. I have always known the first, but I never observed the last.

M. Try it on all the vegetables in the garden and find whether one does not feel colder than another just in proportion as it is of a faster or more luxuriant growth; feel whether a cabbage leaf be not cooler than a sage leaf growing just by it.

G. I will run into the garden and try it now; there is nothing like the time present.

M. Well, how do you find it?

G. Precisely as you said. I touched a few others that were nearly dead; and I felt a sensation of warmth, from some of

them. Do you know the reason of the different degrees of heat in them; and why at the same time, the ground I stood on should feel so warm, and that the spade which was lying in the path should be so hot? All these were within a yard of each other, and I did not perceive that the sun's rays fell on them differently.

M. I know what some philosophers say about it, and to me it looks pretty reasonable; I will tell you, and you can judge for yourself. Vegetables are found to consist principally of water and gasses, or air; these are supposed to enter through the roots and leaves, and to be changed, so as to assimilate with, or become a part of the plant. Heat, or Caloric, as the chemists term it, is necessary for this change, and it is believed to unite with the other materials, and become insensible in the forming; or newly formed body. This may seem strange to you, but you do not see clear water, nor can you discover the pure air we breathe, or the impure air which is found in wells, in the plant, and yet they are all there.

G. Then I suppose the philosophers you speak of, would say that the heat which falls on a vegetable, is taken up, and concealed in it; I wonder if this is not the latent heat I was reading about the other day.

M. No doubt it is heat in the same state; all the heat in any body, which is not perceivable by the senses, is called latent, which means hidden, or concealed. In other words, it is the heat necessary to make it just such a body as it is. If this be so, that is, if plants take a portion of the hot rays which fall upon them, and render them insensible, which do you think would be the warmest, a district where the earth is covered with vegetation, or one where it is bare clay, sand or rocks?

G. The bare country to be sure, if the sun's rays fell in the same direction on both. I have heard that it is much hotter in the great desert in Africa, than in the same latitudes in South America. Does vegetation flourish in that part of South America?

M. It is said that in some parts, it is very luxuriant.

G. I am very much pleased with this conversation, it is so satisfactory to be able to account for every thing. I know all about climates now, and shall never be at a loss again.

M. You had better not be too sure of that, and spare yourself disappointment. Older, and more experienced persons than you find it difficult to account for the differences which are observed in climate. Our situations with regard to the sun; the state of the soil and its productions, together with vicinity to large bodies of water, are general criterions of climate, but they will not account for all the varieties. We may well imagine there are many causes in operation of which men are yet ignorant.

I do not wish you to reject plain reasonings from any facts, but would caution you against hasty conclusions, drawn from the assumption that you know all the facts in the case; or from forming conclusions from too small a number of facts; the first is called dogmatizing; the last theorizing. I consider them both great impediments in the way of getting useful knowledge.

We have talked on the subject of Geography in a way that I think will prepare your mind to be interested with the study of it from books and maps. Do not be discouraged with the new words you meet in this, or any other science; if you are careful to ascertain their meaning, to get a clear idea of that which they represent, you will not find it difficult to remember them; when you see the word, that which it stands for will come into your mind; or when you think of the thing you will remember the name. For example, a cape is a point of land running into the water. A Bay, is water running into the land; if you associate these two names, in your mind with that to which they belong, the sight or sound of the words will be accompanied with the image of the things of which they are the names; or when you see the picture of land running into the water, or think of it, you will remember

that Cape is the name. The same of Bay, and every other word if you do not neglect to make an association between the thing and the name.

You will find Geography a very pleasing study, and it will prove very useful too, but you will do well to pursue it with reference always to the place where you are; that is think of places as being North or South, East or West of you; colder or hotter; more or less productive; the inhabitants more or less industrious, refined etc. than those of your own neighborhood; in a word make your own location a kind of rallying point to which you bring every thing, a measure or test by which to try and compare every thing about which you read.

Zoology.

Next to the horse, the cow is the animal which men rate at the highest price in civilized life. It would be very difficult to decide which is most serviceable among domestic creatures; the horse, the cow, the sheep and the hog all have strong claims on man for the benefits they render him. If he must continue his present mode of living, he cannot get along without all of them. Until he is willing to do without the luxuries of ham, beef steak, cheese, butter and milk; until he learns to go bare-footed, or finds a substitute for leather, and until he learns to transport himself and his burdens from one place to another, by his own exertions, he will have use for them all; and as little as he should do in return, is to make them comfortable. The man who feels no kindness toward the animal from whom he is receiving, or expects to receive so much, may do well to distrust himself, so far as to examine into the cause of his apathy. He would find perhaps that he is not so prone to sympathy, as he is to claim sympathy from others.

The usefulness of the cow is well known, for the beef which is served up to us in so many ways, our rich cheese, delicious butter and nourishing draughts of milk, we are indebted to the cow; and how would we be shod without her aid?

Her hair, horns, hoofs and bones are all brought into use.

This animal is common every where, where there is civilization; and though there are many varieties of cattle in different countries, and even in the same country, they are all supposed to proceed originally from the same stock. This stock is the Bison, or wild bull of Poland and Lithuania. In his native state, the Bison is much larger than domestic cattle are, is heavier before in proportion to his hinder parts, than they, and his hair is much longer especially on his neck and shoulders; it is of a rusty dark brown and is shaggy. His horns are short, pointed and very strong; his eyes are fiery and fierce, and his whole aspect savage and gloomy. Very few animals surpass him in strength, and under certain circumstances he is a fearful enemy.

The Buffalo of America, answers the description of the Bison, and is probably the same animal, somewhat changed by climate and food. They are yet to be seen on the far west prairies feeding in droves of a thousand. Some persons who have been there, say that the appearance of one man will put a whole drove to flight, and that when they all run together, it causes a tremulous motion of the earth for some distance, the noise made by their trampling, resembles thunder.

It is uncertain what is the natural age of the cow; few, however are permitted to live to the age of twenty years.

Astronomy.

JANE.—How have you come on with your astronomy? I suppose you have thought about it since our last interview.

CHARLES.—Yes indeed; I have thought of little else, and the positions and motions of the earth seem so plain to me, that I believe I shall never forget how they are. Now that my ideas of our relation to the sun are clear, and familiar, I should like, if you think proper, to hear something about the moon. It is different from the other heavenly bodies; sometimes it is in the East in the evening, at other times

in the West; at sometimes it is quite round, at others, it makes only part of a circle; and then again it cannot be seen at all. Can you explain to me the cause or causes of these different appearances?

J. I can put you in a way to explain them to yourself, and that will be better. Bring your ball and knitting needle. You say you have the idea clearly, that if you take the ball once around the candle, it represents the earth's annual revolution around the sun. Place the stand with the candle on it, in the middle of the room. Suspend the ball in your left hand so that it will be as high as the flame; walk around the candle until you come to this place again. Your earth has made an annual revolution. Now take this small ball and hold it above your right hand, by the pin which I have stuck in it. Hold it so that it, the large ball, and the candle shall be level and in a straight line. I wish you to walk around the candle as you did before, holding the large ball precisely as you did then, and while you are doing so, pass the ball in your right hand, thirteen times around the one in your left. To do it with precision, you should have a ring chalked on the floor, to walk on; this would keep you the proper distance from the candle. This ring should be divided into thirteen equal parts, that you may know how far you should walk, while the smaller ball is making a revolution round the large one; with these preparations, if you keep your left arm bent to a right angle at the elbow, you can keep the small ball at equal distances from the large one, in every part of its thirteen revolutions around it.

C. I can do that another time when I am alone; I shall spare no pains to do it rightly; but I should like you to tell me what this experiment has to do with the changing appearances of the moon. Will you give me a first idea?

J. It is not the right way to make the application before the experiment is perfected, but I know you will not neglect to complete it, and so I will do what you require of me.

The moon is known to make thirteen revolutions round the earth in a year, and hence if you call the large ball Earth, and the small one Moon, the motions you will give them, when you learn how to do it with precision, will truly represent the movements of those two bodies as they travel together around the sun.

I may now tell you that the moon is believed to be a dark body, and that the light which it sends to us, is part of the rays which fall from the sun upon it. You know before we lighted the candle, we could not see the objects in the room, nor even the walls; this was because they are not luminous, that is they have no light to give out; but as soon as the candle was brought in we could see them all. The rays of light from the candle, fall upon them, and are sent from them to our eyes; they are said to throw off, or reflect a part of the light which goes directly from the candle to them.

C. I see that what you say is true; I have noticed it before, but I do not understand it.

J. We will talk of reflected light, at some future time; it belongs to a science called Optics. It is not necessary to our present enquiries that you should examine into the cause of it now; let it suffice that you observe the fact that light is reflected. Observe in particular, whether any is reflected from the balls you have in your hands.

C. I have observed that already; I could not see them if no light came from them to my eye; and I perceive that about one half of each ball, is much more enlightened than the other half, but I cannot tell why I can see the other half at all, for no rays from the candle fall on it.

J. None indeed. Some reflected rays from the wall are thrown on the shaded, or dark sides, which enable you to see them when near you. You could not see them, without additional light, if they were removed to some distance, though you could if you were on the enlightened side of them.

C. Let me try if I cannot make something of this. Now when I hold my little moon nearly behind my little earth, the side of it next to the earth is enlightened. Would not the people on the side of the earth next to the moon, see a full moon?

J. Undoubtedly they would. And now let me hear if you can tell what they would see if you change the position of the moon, so as to place it nearly in a line between your earth and sun.

C. Taking into consideration the distance from the earth to the moon, I should suppose they would see nothing, I observe that I do not see the ball so distinctly, even at this short distance. I will venture the opinion that this is the relative positions of the three bodies when we have no moon.

J. You are right, and I doubt not with your industrious habit of examining things, you will be able, while revolving your balls between those two points, to account for all the different shapes of the moon, called the moon's phases.

C. I am beforehand with you; I took notice as I was moving the moon from one place to the other, that the people on the earth would see less and less of the enlightened part, until at last it would all be turned from them. I can manage this nicely I dare say. But what is the reason you did not direct me to hold the two balls so that they and the candle would be in a straight line? Would not that shew the full, and dark moon, better than when they do not make an exact straight line?

J. Try it and see for yourself.

C. It does not do at all; for now when the moon is directly behind the earth, no light from the candle or sun falls on it; and now that the moon is in a straight line between the earth and the sun, no light passes from the sun to the earth, and of course the people on the earth could not see the sun.

J. Well and what should we call that?

C. Why an eclipse I really believe! Let me see; the sun is now shining upon the earth; the moon is going on in its orbit, after this manner; now one edge of

the moon comes in between the sun and earth, now more and more, and now it stops all the rays; I have no doubt but this is a total eclipse of the sun.

I will now try it on the other side. Precisely the same result; here we have a total eclipse of the moon. Well I am delighted with this explanation; but I should think we ought to have twenty-six eclipses every year, for as the moon goes thirteen times round the sun, it will be thirteen times between the earth and sun, and as often behind the earth from the sun. Why have we not thirteen solar, and thirteen lunar eclipses, (I believe these are the names they call them by,) every year, and why are they not total?

J. Because it is but seldom that these three bodies are in a direct line; whenever they are it causes a total eclipse of sun or moon; when portions of them, only, are in straight lines, it is the cause of a partial eclipse.

The reason why two eclipses do not occur every month, is because, in the language of astronomers, "the plane of the moon's and the earth's orbit do not coincide;" which means, that they are not on the same level; but this is rather difficult to explain to you now; or rather we have talked long enough for the present.

How a Fly walks under the Ceiling.

ELIZA.—Mother it seems very strange to me that flies walk under the ceiling and up the panes of glass, do you know any thing about it?

MOTHER.—Did you ever take notice that the bell glass sticks tightly to the floor of the air pump when the air is exhausted?

E. Yes but I do not know why it does so?

M. Although we feel nothing of the weight of the air, yet the atmosphere above and around us, presses as much against us as thirty-two feet deep of water would do. Now if you were to put a tumbler at the bottom of a river thirty-two feet deep, if it were full of water, the glass would not be more liable to break than if it were only one foot under water, for the

Water at the bottom on the outside of the glass, has to bear the weight of all that which is above it, and that inside of it supports the glass, while the glass supports the water above it; so that the glass does nothing but keep the water inside and outside of it apart. Do you see that this has no tendency to break the glass?

E. Yes I believe the water inside will press upwards against the bottom of the tumbler, just as hard, as that on the outside presses downwards upon it; if it did not, the tumbler would be forced into the ground at the bottom of the river.

M. Well, what do you suppose would happen if an empty tumbler could be placed with the top downwards, at the bottom of a river?

E. Why it would sink into the ground, or be smashed by the weight of the water above it.

M. This is precisely the situation of the bell glass, or air pump receiver; it fits closely to the floor of the pump, and the air is exhausted or pumped out of it, so that it has to bear the weight of the atmosphere on the outside without any thing to press against it from the inside. It is this atmospheric pressure which causes it to adhere or stick so closely.

E. I understand what the air pump does, very well now, but has this any thing to do with flies walking on glass?

M. Yes; the legs and feet of flies have a kind of air pump contrivance in them, by which they hold themselves on the ceiling in the same way the receiver is confined on the air pump.

E. Oh! mother I should like to examine them it would be very curious I dare say, and then I should know how an air pump works; if I catch a fly, will you show me how he pumps himself fast to the ceiling?

M. I cannot my dear, it is so small, that we could not see it without a solar microscope to increase its size thousands of times. In such cases as this, where you have not the proper instruments, you will have to depend upon others; but never do it when you can help yourself.

Elementary Principles.

In No 3 an attempt was made to explain elementary principles. I will now write down the names of those which are most common, that is of the simple elements most abundant in the substances you are acquainted with. I will begin with those which are best known to you; they are the bodies called earths. Chemists reckon ten of them, but the rest being little known, I shall mention but four.

Alumine, or pure clay.

Silex, or white flint.

Lime.

Magnesia.

Of the three first the nucleus or ball of the earth is principally formed. When pure, that is, unmixed with other substances they are all four white, and would not be known from each other by an inexperienced person.

Alumine sucks up water readily and forms a tough paste. Silex does not adhere when made wet, and however finely powdered, feels sharp and gritty. Lime has a peculiar smell by which it may be distinguished; it swells and gives out heat when water is put on it. Magnesia is lighter than any of the others, does not form paste with water, and when rubbed between the fingers, has a soft soapy feeling.

The bodies next best known to you are called metals. Gold, silver, copper, lead, tin, iron and zinc are called malleable metals, because they can be spread out under the hammer; arsenic, bismuth, cobalt, chrome, antimony and manganese, are called brittle, because they do not spread out. Mercury is fluid. There are fourteen other metals, but they are rare and little used. The metals have some things in common; they are all heavy bodies, they are all opaque, and they have all some lustre.

There is another class of bodies called alkalies; it contains potash, soda and ammonia.

Besides these, there are several that are not classed with those mentioned, or with

each other ; such as carbon, sulphur, phosphorus, oxygen, hydrogen, nitrogen and carbon.

None of these are found pure in nature. but mixed with each other in various proportions. The earths, for example, are seldom found alone, and they are generally colored by some metal, such as iron or manganese. Of late they, and the alkalies, are considered metals, in a very impure or mixed state.

In nature the metals are mixed with each other and with the earths, and mostly combined with sulphur or oxygen ; in this state they are called ores. The pure metal is separated from the other substances by heat.

Potash is found in the ashes of wood, weeds, &c, which grow around us ; soda, in the ashes of sea-weeds ; ammonia is obtained from animal substances.

Carbon is in charcoal ; sulphur is found about volcanoes ; phosphorous is obtained from bones ; Oxygen, hydrogen and nitrogen, exist in various combinations, and in great abundance in an aeriform or gaseous state.

Caloric is that substance, or that property or state of matter, which produces in us the sensation of heat.

Bread Fruit.

The tree which yields this fruit grows in warm climates, more particularly in the fertile islands of the southern Pacific Ocean. It grows to the height of forty feet, and has a luxuriant foliage.

The wood is used for constructing boats and houses, and for other purposes ; cloth is made of the bark ; and the leaves serve for towels ; but it is most valuable on account of the fruit which is the principal sustenance of the natives through great part of the year. It is a spontaneous growth they have nothing to do but pluck, cook and eat it.

The bread fruit has the shape of the cocoa nut, and is about nine inches long. It has a green rind or skin, between which and a small core lies the eatable part. This consists of a white mealy pulp, which

inclines to yellow, and becomes juicy when the fruit is mature.

The taste of this fruit depends much upon the manner of cooking it. Prepared in one way, it resembles cake made of flour, milk, eggs, butter and sugar ; prepared after another manner, its taste is similar to a boiled potato. The most usual mode of cooking is a kind of baking, where they enclose the fruit in a banana leaf, and surround it with heated stones.

In 1787, George III, King of England sent a vessel to the Society islands for bread fruit plants, to cultivate in the British West Indies. The plants grew finely, and bore fruit in abundance from 1795 until 1801, since when there have been no notices of them.

Not simple enough yet.

I am now convinced of something I have suspected since the first number of this paper was published, namely that the manner of thinking, or the style of writing in it, or both, are above the capacities of ordinary scholars in ordinary schools. Frequently when I have been preparing an article it has appeared so simple that I have felt repugnance to its insertion ; my author pride revolted at the smiles it would excite ; all such considerations were, and are foreign to the object I have in view, and all such delicacies improper to be indulged.

I trust, from the manner in which studies are pursued in our school, that the pupils would bear comparison with those of their own attainments, who have been taught differently ; they have been introduced to every thing treated of in the "INCITER" at least incidentally, and yet they are not prepared to read the matter of the paper instructively.

Yesterday a class read the article "Old and New ways," in page 22. Some explanations were attempted and some questions asked. With the consent of the class we tried it again this morning, they having in the mean time, applied themselves to the study of it. Some members of the

class could not give a synopsis of the portions they read, and I requested them to turn to "Scholars from different schools," page 45. This they read with much more spirit and more propriety than they read the other, though they had used exertions to prepare themselves for the first, while it is probable some of them then read the last article for the first time.

"Old and New ways," I had written with care, and as I conceived, with adaptation to the wants of those to whom it was addressed. "Scholars from different schools" is a communication from one of our boys who has not been favoured with means for instructing himself, and withal has written (not by guess, nor with skill, but just in his own way, the only way he could do it,) better than I who fill the station of teacher, and assume the office of writer.

The disposition made of Human Bodies.

The first account that we have of interment is to be found in the bible. The patriarch Abraham gave the best of reasons for inhumation, namely that he "might bury his dead out of his sight." It is likely, if Sarah's was the first funeral, that it was very simple; whether or not, it is probable it was not long until they were performed with more ceremony.

There have been different ways of disposing of the dead, in different countries, and in different ages of the world. In some places, and at some times we are told that it was the fashion to burn them, collect the ashes and bury it. In others they embalmed them.

There is no embalming done now that we know of; but it is supposed that it was done by taking out the brains and intestines, and putting various spices which had preserving properties, in their places. After this, the body was kept in a strong solution of salt petre, until it was saturated with the salt; next it was wrapt in fine linen and gums. It is said that some bodies were preserved in this manner so as to appear almost as they did when animated.

In very hot climates it is probable that bodies were kept for a long time without embalming; for if the softer parts, such as the brains and intestines were removed, the flesh would become dry and hard with the heat. We are told that many bodies are found in the sands in Egypt, that are supposed to have been there a long time, preserved in this way; some of them have linen around them, and others have no covering.

The bodies preserved in either of these ways are called Mummies, and are accounted great curiosities, by some people. They think it very curious to stand beside persons who probably lived thousands years ago.

There were six mummies lately exhibited in this city; several of the scholars and myself went to see them and were gratified with the sight. I had seen mummies before, but none in so good a state of preservation. Their forms are perfect except that they are somewhat shrunk. The features of some of them are as distinct as they ever could have been, and one of them has part of the sandy hair which once ornamented the head of the wearer. They have spices in them, and are wrapped in many folds of linen. There is no deception in the matter, for in some places the folds of linen are broken and we have an opportunity to see the joints, and the nails of the fingers and toes, all very perfect. In some the limbs or skull are broken, giving the spectators a chance to examine the bones and muscles closely. Some of the mummies appear to have been aged people; they have lost their teeth; others have theirs entire, and they are very white and fine. The only one which has any hair is a small person and seems to have been very handsome, with the exception of two blemishes, an irregularity of hair, or cow lick on the forehead, and a hare lip. They are nearly black. The proprietor shows a number of papyrus leaves which are neatly marked with letters or characters which cannot be deciphered by any person who has yet seen them. These hieroglyphic character have

been examined by printers of this city who give it as their opinion that they are printed; if the opinion is correct, and the history which the proprietor gives of them be true, the art of printing must have been known in an earlier age of the world than we accredit with its invention. The admirers of Dr. Faustus might not like this well, but they may reflect that two men having no knowledge of each other may invent the same thing.

The owner of the mummies here described, says that they were lately dug up near Thebes in Egypt, where they lay in vaults, or Catacombs, two hundred and thirty feet below the surface of the earth.

Sugar.

This article, so well known to every one, exists in almost all vegetables. It may be found in the flowers of some; the leaves of some, and the stems and roots of others, contain it in considerable quantities. With the sweet taste of many fruits, children are well acquainted. The beet, carrot, parsnip and other cooked vegetables, are also sweet; this sweet taste in all of them is owing to the sugar which makes a part of each.

The sugar which we have here, is principally obtained from the sugar cane, a plant which grows in warm climates, and which is extensively cultivated in the East and West Indies.

The sugar cane resembles a corn stalk, though much more beautiful. A field of canes in blossom is said to be a splendid sight; and we can easily conceive that it is so when the stalk is of a bright golden colour, the leaves long and pendant, and the top like a plume of white feathers tinged with lilac.

The season for planting the cane is in August. The planters make furrows or trenches along which they lay the stalks. Roots grow out at each joint, and in about a year the stalks which grow out at these roots, are fit for cutting. The leaves are good food for cattle. The stalks are passed between strong iron rollers which press the juice out of them and it is convey-

ed to boilers where some lime is added to take up the oily and acid matter which is in it. Where the lime unites with these matters they float on the top and are skimmed off. After six or seven such boilings the liquid is put into shallow wooden vessels, called coolers; in them it *grains* or chrystalizes. The part of it which does not chrystalize is molasses. Thus brown sugar is made. Loaf sugar is nothing but brown sugar put through other refining processes which take from it the coloring matter and other impurities.

The inhabitants of the north-western part of the U. States are supplied with sugar, from the sugar maple tree which grows abundantly in the forests of that section of the country. For a considerable extent in some places, there is scarcely any other timber.

In the month of April they bore holes two or three inches deep into the trees, ten or twelve inches from the ground. Into these holes they insert tubes or spouts, through which the sap passes off into little troughs below. From these troughs it is collected and put into boilers, where the operation is similar to that described with the juice of the sugar cane.

COMMUNICATIONS.

The Hornets' Nest.

MR. GILBERT.

I have written this piece to show your young readers, that it is easy to write on any subject that we are acquainted with, if they would undertake it. The following is very simple and all who can read can understand it.

It is about two boys who were one day taking a walk, the one found a hornet's nest, and was at a loss to know what it was.

I see something in the thicket there, said Henry, about the size of a hat, it is fastened to the bushes and there is something flying in and out at the hole, I wonder what it is?

I don't know, said Edward, I see there are comers and goers.

H. We will go and examine it.

E. We can go a little closer, but don't go too near, for I think they are the things we read about the other day, don't you remember the author explained to us their nature, how savage they are when they get disturbed?

H. O yes, I do, I believe he called them hornets.

E. Yes, that is the name. We will stay here a while and watch how they build their nest; we cannot spend our time better here; we ought to know something about them, as well as about other things.

H. Yes; that is true. Don't you see how earnestly they are employed on the surface of their nest?

E. Yes, I have just now been taking notice of that; and another thing, they are continually flying in and out, so that when some go in, others come out; they are in constant motion.

H. Don't they go out to bring something to build their nest?

E. Yes they gather stuff from the surface of wood which stands a long time. They have some kind of glue or liquid which they throw out of their mouth, with this they fasten what they collect together. I have often seen them on old fence rails gathering the moss, or whatever it is, to make their nests.

H. I see the nest is just the color of fence rails. Do you know what they live upon?

E. Yes, they catch flies and other insects, did you never see one like them catching flies?

H. I remember now, I saw one once darting on flies, but it took it some time before it could catch one.

E. A fly is too active for a hornet, but when they are not on their guard he can catch them.

H. Have not animals mind? it appears so, because we can see them employed in many things, and every kind knows its own business and how to make a living.

E. It is supposed some have; you can see it in many cases. A hawk, or crow, for instance, will stay on a tree under

which there are cows, sheep and other animals; but as soon as a man with a gun comes it takes to flight. And in many other things you can see that they have some portion of mind, especially among quadrupeds.

H. A dog can be taught to perform many things.

E. Yes, he can be taught to be useful to man;—to fetch cattle from the field, to watch the house by night, &c.

H. I believe the spaniel species is the most easily taught, I have often seen them do odd tricks.

E. Some brutes are very useful to man; but whether useful or not, we ought not to hurt, or kill them unnecessarily.

H. Yes, but that is not always the case, we see many lives taken unnecessarily.

E. I can't see any pleasure in taking the lives of things that do no harm, and are of no use when killed. I don't see how any person can take pleasure in it. If you or I were to kill a bird with a stone, and then think about it; that it never injured us, and perhaps has young ones, and that they must now suffer, that it was deprived of the pleasure of living, by us, what pleasure could we have in it?

H. This puts me in mind of seeing a boy killing bees, who had collected together sweets, and another boy on seeing him said, "why do you kill those bees? they are fond of life too."

E. I expect he thought about it and saw that the other boy was right. We will now go home, or night will overtake us, and remember that it is wrong to give pain to brutes unnecessarily if we can avoid it.

R.

Composition.

JOHN.—How tired I am of writing composition. I can't think what to write about.

WILLIAM.—There is always something or other to write about, you could write a description of a cow, a horse, or a sheep, you could write about an apple tree. It grows out of the ground and bears blossoms, the blossoms turn to apples, some

of the apples are ground and when they are pressed cider runs out. Some of the cider is kept till it gets sour, then it is called vinegar. Some of the apples are put under ground to preserve them, that they may be had in winter.

Could you not write such a simple thing as this.

J. Yes, I think I can, and I will try if I can give a description of a sheep.

A sheep is an animal, it has four legs, it is hoofed, its hoofs are divided, it is a very gentle animal, it is easily frightened, it yields wool of which some of our clothes are made, it is sheared in the beginning of summer, its flesh we use for food, the skin is tanned and made into leather.

W. Very well, I thought you could compose pretty well, if you only knew it.

J. Now I am in good spirits to write composition, and if I get along pretty well, I will show you some of it the next time we meet. F.

New-York.

My residence at present, is in a part of the country, remarkable neither for beauty of scenery, fertility of soil, nor an intelligent population, and near thirty miles from any town of importance; consequently a description of it would contain but little that would be either interesting or instructive. I should choose therefore if "Ann" is willing, to give some account of where I have lived, rather than "of the place where I now live."

New-York is situated on the South side of Manhattan Island, at the junction of the Hudson and East rivers. The Island is about ten miles in length, from North to South, and from three to four in breadth. It contains many country seats, the summer residences of such of the citizens, as can afford to spend the season in idleness, or can oblige others to toil for them while they are relieved from the din and bustle of the town.

The city is among the first in the world in commercial importance, and the first in the Union in point of population, in 1830 it amounted to 214,000. Its harbor is ex-

cellent, and open at all seasons of the year. The streets are very irregular; in many places they are broad, clean and elegant, though most generally they are narrow and crooked, and in many places mean and filthy, and appear only as the abodes of poverty and wretchedness, presenting a striking contrast with the more wealthy parts.

Its markets are well supplied with provisions, brought principally from the northern and western parts of the state; the sandy soil of New Jersey also supplies many of its luxuries, such as peaches, melons, sweet potatoes, &c. Its fish market is probably the best in the world. It contains many public buildings, the most conspicuous of which are the City Hall and Exchange, the former of which is a spacious edifice; it cost half a million of dollars. There are many schools, both private and public, the latter are free to all, and the expenses paid by common tax, but they are not at present so conducted as to render them of much utility to those whom they profess to benefit. Much interest has of late been evinced by many benevolent citizens and influential men; and much zeal manifested on behalf of schools, that shall be so conducted, as to enable them to afford instruction to those who are at present destitute, and by so doing to arrest the progress of vice and pauperism, which they conceive to be increasing to an alarming extent.

It abounds in churches occupied by various professions. The places of amusement are also numerous. It contains three theatres; a number of Zoological and Botanical gardens; and the museums, containing perhaps as great a collection of the wonders of nature and art as is to be found upon the western continent.

The most pleasant of the public walks is the Battery, an enclosure of about half a mile in circuit, situated at the immediate junction of the two rivers, planted with trees and laid out in gravelled walks; this affords a delightful retreat after a sultry summer's day; the refreshing breezes from the ocean, together with its fine pros-

pect of broad blue water and sailing vessels, contrasted with the lively green of the adjacent country, unite to render it peculiarly pleasant to the pent up citizens of New-York.

SARAH.

Morning.

The valley is shrouded in mist, and along the eastern part of the horizon a few faint streaks of red appear.

The smoke begins to curl from the chimney tops of the cottages, whose white walls are almost hidden from view by the green vines that twine over them, and the fruit trees which are white with sweet-scented blossoms, and promise a plentiful supply of fruit the succeeding autumn. The little birds are rising from their rest in the boughs, and are beginning to sing in the green trees and hedges, and some of them are employed in building nests in the slender branches.

The plough-boy is seen beginning to turn over the green sod, which is bespotted with the sweet smelling clover, and the young lambs are skipping over the green grass, that glistens with the sparkling dew.

Every living thing starts into animation with new vigor, after their refreshing rest, even the little bees are humming over the clover tops and collecting the sweets they afford for a plentiful winter store.

The little rivulet goes murmuring through the green meadow whose flowers dip their leaves in its clear water, where the little fish are already beginning to sport in the sun's first beams. F. F.

Time.

Wave after wave, as rivers flow,
And to the ocean run,
So minutes after minutes go,
And are forever gone.

Oh, who would then throw time away,
And trifle to his cost?
My hours, in idle childish play,
Shall never more be lost.

Then let us never think of play,
But let our study be;

To seek for knowledge every day,
From idle habits free.

ELVIRA.

SELECTIONS.

Children cannot collect honey from flowers, it is true, but they can collect that which is as useful to them, as honey is to the bee.

Should they resolve like the prudent industrious "Busy," to depend on their own exertion for getting every thing they want, they will not only have abundance for themselves, but that abundance may become a part of the common stock. This is strictly true however of all the useful knowledge they gain; if they are at all benevolent, they will make it well nigh as useful to others, as to themselves.

While they are thus employed, they will have little leisure and less inclination, to go with thoughtless Velvets among mere butterflies.—Ed.

The Two Bees.

There were two bees, one called Velvet and the other Busy. Velvet had fine gauze wings, and a black body marked with stripes of bright yellow; but though she was so pretty, she was not good; she was lazy and loved play, and flying about from flower to flower; she ate all the honey she gathered, and brought home none to increase the common store.

Busy, who was only a plain brown bee, was busy all the day; she brought home plenty of honey and wax, and was the most industrious bee in the whole nest. One fine spring day, Velvet and Busy left their nest in the wood, to seek for honey, (for they were wild bees, and did not live in a hive, but in the hollow branch of a tree.) The fields were full of daisies and cowslips, the wild roses and honeysuckles bloomed in the hedges, the sky was serene, and the birds sung from every green bush.

Busy sought the fresh opened blossoms of the cowslips, and was soon intent on the labours of the day; whilst Velvet—idle Velvet! flew from flower to flower, tasting the honey from each, and humming

gaily as she went. She enjoyed herself for some time in this manner; but like most idle people, she grew weary and said to Busy—"I hate daisies and cowslips: leave this dull meadow and fly with me into yonder garden; the sun shines warmer there, and the borders of the garden are gay with full blown-roses, and pinks, and lilacs."

"There is richer and sweeter honey in these cowslip-bells," said Busy, "than among the roses and pinks you admire so much; and if we spend our time in flying about, we shall bring home a small store of honey, and shall perish with hunger when the cold weather returns."

"There will be plenty for us," said careless Velvet.

"No," said Busy; "I will never eat the fruits of another's labour, when I am able to work for myself."

"You may do just as you please," said Velvet; "for my part, I shall not waste all the fine weather in working. Look at the butterflies; they do nothing but enjoy themselves, fluttering among the flowers and chasing one another—they are happy creatures, and I shall go and play with them;" and away flew this idle bee to the garden, where the butterflies were gaily sporting. But the butterflies showed no regard for Velvet, and would not play with her; and she soon grew tired of watching them, and looking at the brilliant colours in their gay wings as they fluttered past her; so she left them, and flew away over the garden.

At last she came to an apple tree in full bloom, whose boughs overhung a pond of clear water. "Ah!" said Velvet, "how sweet these orchards are! there is no tree like this in the meadow; how glad I am I left Busy and flew hither!"

The water was so clear in the pond, that Velvet saw all the shadows of the blossoms that hung over it, and her own form reflected among them; just at that instant, while Velvet was looking at her own image in the water, a sudden breeze shook the boughs of the tree so roughly, that it scattered the blossoms on which

she was resting; and not being on her guard, she fell into the water, and was borne by the motion of the wind into the middle of the pond.

What would silly Velvet now have given, had she but taken the advice of prudent Busy, and stayed in the fields. She strove to raise her wings, and fly from the surface of the water, but they were so clogged and heavy with wet, that she had no power to move them.

For some time Velvet floated on the water; the wind wafted her more than once to the very edge of the pond; but alas! she could not get out, and before night came on, poor Velvet was drowned.

Now I suppose you would like to know what became of Busy. She gathered much store of honey and wax that day; but she did not forget her companion, and wondered what had become of Velvet; she thought she would return at night to the nest in the wood; but night came and though all the other bees came back from their work, Velvet did not.

Busy was grieved, for she loved Velvet in spite of her idle ways; and she said, (for Busy was a good bee,) "I will go into the garden and look for Velvet, for I fear some harm has befallen her; but perhaps she was tired with wandering last night, and has fallen asleep in the flowers of a foxglove or lily."

Then Busy sought for Velvet among the blossoms in the garden; and she asked all the wild bees she met, if they had seen Velvet. For a long time she could hear no tidings of her; till at last one said, "I was flying over the pond by yonder apple-tree, and I saw a drowned bee floating on the water."

Then Busy went to the pond, and the first thing she saw was poor Velvet—quite dead.

"Ah! silly Velvet!" said Busy, "why did you leave me, to go and play with the butterflies in the garden? If you had not been so idle, you would not have met with so sad an end."

My little readers, I hope you will take example from the story you have just read, and

"Like the little busy bee,
Improve each shining hour,
And gather honey all the day
From every opening flower."

I think our readers will not be likely to take fables for truth. The only use which I can conceive a fable to have, is to arouse the mind, as it were, and set it to work with greater activity than it exhibits, without such first excitement.

The following fable shows the difference between the aggressor and the avenger, very distinctly. We cannot but admire the affection of the dog, however we might be disposed to wish that he had contrived some way to spare one life; while he was preserving another.

Some persons say, that in the present state of society, if a man were nicely honest, he would not get along, that he must discover who are rogues and fools, and treat them accordingly. They would justify the dog in deceiving the wolf to his destruction. Just let us think whether Trusty's moral character would not have stood more fair, if he had said to the wolf, "I live in the same house with that babe; the treatment I receive from the family would be illy repaid, were I to look on, while any member of it was being injured. You had better consider what you can do with me before you attack the infant; rely on it, I shall be its protector by day and by night; you must destroy me ere you hurt it.—Ed.

The Wolf and the Dog.

"Where are you going in such haste, friend?" said Trusty the Shepherd's dog, to a great wolf that was jogging along the same road. "If I was sure you would not betray my secret," said the wolf with a sly leer, "I would let you know."

"You need not fear me; I shall tell no one a word of the matter," said Trusty. "Well then," said the wolf, "you must know, as I was prowling round yonder cottage, I saw the peasant's wife put a fine baby into the cradle, and heard her say, 'lay still, my darling, and go to sleep, while I go down to the village to buy

bread for your father's supper. As soon as the babe is asleep, I shall go and fetch it; it is fair and fat, and will make a nice supper for me and my cubs."

"Then," said Trusty, "I would advise you to wait a little, for I saw the baby's mother step into the next house to speak to a neighbor;—take care lest you are seen."

The wolf thanked the dog for his good advice, for he did not know that the baby belonged to Trusty's master; and he said he would take heed and keep close.

Then Trusty ran home with all the speed he could. The door was ajar, and the innocent baby was fast asleep in the cradle; so he laid down on the mat behind the door, and listened for the coming of the wolf. It was not long before he heard the tread of the wolf's feet on the gravel path, and in another minute the savage beast was in the room and stealing with cautious steps towards the cradle; but just as he was preparing to seize the poor baby, Trusty sprang upon him, and after a severe struggle, laid him dead on the floor.

The first object the mother saw on her return was the wolf bathed in blood at the foot of the cradle, while the infant, unhurt, lay soundly sleeping on its little pillow, and faithful Trusty watching its peaceful slumbers.

The grateful mother fondly caressed the preserver of her infant; and calling together all her neighbors, made them be witness to Trusty's courage and fidelity. From that time he became a favorite with the whole family; he had his share in all the meals, and a warm nook in the chimney corner, and passed a long and happy life.

The great wall of China is conducted over the summit of high mountains, across deep vallies and over wide rivers by means of arches. Its extent is computed at 1500 miles; in some parts it is 25 feet in height, and at the top 26 feet thick.

ODD INTIMACY.—A duel was lately fought at New Orleans, between two *intimate friends*, one of whom received a ball in his forehead and fell dead instantly.

The little Bird's Complaint to its Mistress.

Here in my wiry prison, where I sing
And think of sweet green woods, and long to fly;
Unable once to stretch my feeble wing,
Or wave my feathers through the clear blue sky.

Day after day the self same things I see,
The cold white ceiling, and this wiry house;
Ah! how unlike my healthy native tree,
Rock'd by the winds that whistled thro' the boughs.

Mild spring returning, strews the ground with flowers,
And hangs sweet May-buds on the hedges gay;
But no warm sunshine cheers my gloomy hours,
Nor kind companion twitters on the spray!

Oh! how I long to stretch my weary wings,
And fly away as far as I can see;
And from the topmost bough, where robin sings,
Pour my wild songs, and be as blithe as he.

Why was I taken from the waving nest?
From flow'ry fields, wide woods and hedges green,
Torn from my teuder mother's downy breast,
In this sad prison-house to die unseen!

Why must I hear in summer evenings fine,
A thousand happier birds in merry choirs?
And I, poor lonely I, forbid to join,
Cag'd by these wooden walls and golden wires.

Kind mistress come, with gentle pitying hand,
Unbar my prison door and set me free;
Then, on the white thorn bush I'll take my stand,
And sing sweet songs to freedom and to thee.

The mistresses reply to the bird, is not so good poetry or reasoning. After enumerating her kind care for her favorite captive, (as slave holders do,) she affects to anticipate great suffering for her prisoner, should it now be liberated. "She says, "Fierce hawks would chase thee tumbling through the skies, or crouching pussy mark thee for her prey."

Sad on the lonely blackthorn wouldst thou sit,
Thy mournful song unpitied and unheard,
And when the wintry wind and driving sleet,
Came sweeping o'er, they'd kill my pretty bird.

Not a word like "What should I do without thee;" the real burthen of the song. Poets, with the prettiness of their art, coax us to dispense with truth; and even sometimes to receive a little error at their hands.

Forward names of subscribers, with the State, County and Post Office legibly written.

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EDITORIAL.

To Parents.

There is not in life a situation of equal difficulty and responsibility with that of parent. The immediate agent of existence to sentient beings, who without being consulted, were brought unconsciously and involuntarily into life, he owes them every conceivable obligation.

Talk as we may of the obligation children are under to their parents, magnify it as we may, it is a small matter to that which the conscientious parent must *feel*, when he reflects thus, "but for me, he would not have been here," he must perceive that his measure of duties is not fulfilled, so long as any thing in his power remains undone.

With all this responsibility pressing upon him, what is the parent to do? He may distrust his judgement to devise the best plans, and regret the want of facilities to execute even those in which he has confidence. For his necessary ignorance and impotence, he feels no compunction—for those he merits no censure. It is only for indifference and negligence that he is blameable.

All this admitted, a very frequent and a very sensible question, is, what is the first step to be taken in the important business of developing and training the infantile mind? A very common and, if suitably limited, a very proper answer, is "teach him obedience, he has no experience of his own to direct him, he must therefore profit by yours; this he cannot do without obedience. As the will of the child is always in advance of its understanding, if it be not early taught obedience, it is very

liable to err. But then, here a difficulty of immense magnitude presents itself. The implicit authority which is assumed, will, unless it be exercised sparingly and wisely, produce servility, with all its concomitant evils.

I know not a state of greater difficulty than the subjection of one will to that of another, without producing degradation in the subordinate.

It is very reasonable, and very necessary that the parent's experience should guide the child, until its own is sufficient for that purpose; it is necessary for the comfort of both, and yet they are both endangered. Not only does the authority, unless it be exercised with the most judicious and scrupulous care, prevent the child from making its own observations, forming its own conclusions, and directing its own actions, but there may grow imperceptibly, in the mind of the parent, a fondness for arbitrary power, greatly detrimental to the child's growing independence.

It would be impossible to form any systematic rules for our guidance in this matter, as every case is a single one, and the circumstances of the parties continually varying; but our utmost skill should be in constant requisition for devising such a course as will in our several peculiarities of circumstance, best serve to conduct those under our care safely, between the extremes of mental slavery, and wayward insubordination.

A few hints, which if from experience they should be found true, might become educational maxims; such as success in the work of moral training, depends more on *prevention*, than *cure*, more on *forming*

habits, than *laying injunctions*, more on *example* than *precept*.

Prevention can be better effected by regulating circumstances, than by governing desires; the formation of good habits is more dependant on making virtue agreeable, than on any kind of restraint; and the influence of example is potent in the absence of authority, of acknowledged right to dictate.

Cannot children at an early age have clear perceptions of right and wrong, by referring to their own sensations? And would not those who have the care of them act more wisely by situating them so that they shall frequently make such reference rather than by rendering them dependant either through love or fear, on their preceptors, prevent them from feeling their individual accountability?

If I mistake not, self-responsibility is the best of safeguards against evil, as well as the safest and strongest stimulus to good. If so, it cannot be too early inculcated, that it may supersede the necessity of a portion of that arbitrary authority, in the exercise of which so much skill and prudence are requisite.

To Teachers.

THE ARITHMOMETER,

Is an instrument consisting of a wooden frame about the size of an ordinary slate frame; having a handle on one side of it, and twelve wires running across it; each wire has twelve moveable balls, or beads strung upon it, which take up half the length of the wire. It resembles a grid-iron in form.

As there are twelve wires each with twelve balls, the instrument corresponds to the multiplication table; the one shews the *things* of which the other exhibits the *signs*.

With this instrument in the hands of a person acquainted with its use, any number of children may be learned, not only to enumerate accurately, but operations in the four simple rules of arithmetic may be performed most instructively

to the pupils, and with ease to the preceptor.

In the first place the class is to be told that a ball which is removed from its fellows, is *one*, that is, that one, is the name for an individual. The name for it and another individual, is *two*; and so on to twelve or any other number. It is important to inform the pupils that these names are arbitrary, and have no signification further than as they are the selected names of a number of individuals. To impress this on the mind, the eyes of the class should be continually on the instrument during the lesson. The eye and the ear thus addressed simultaneously, a permanent association is made between numbers and their names; the only way in which to avoid obscurity in numerical abstractions.

By the time the class has learned to enumerate it may commence addition. This may be done by first removing a ball to the opposite end of the wire from that which carries the other eleven, and while in the act of bringing another to it, get the class to say in concert, "one and one are two." While the next is being brought to them, "two and one are three," and so on. The same with two and two, three and three, and all other numbers.

In subtraction say, (removing a ball while you articulate the words,) "take one from twelve and eleven remains." "One from eleven and ten remains," and so on.

For multiplication, the balls on the wire should be divided into parcels of two, three, four, &c. If the parcels consist of two, pointing to two of them, say "two times two are four;" to three, say "three times two are six;" and in like manner with other parcels. Operations in division require that the balls on a wire should be separated into lots or parcels, as in multiplication. Suppose them to be divided into parcels of two; they say "two can be taken out of four, two times, out of six three times," and so of all the rest.

The principles of Proportion or the Rule of Three, can be most efficiently taught on the Arithmomcter. Let it be required to find the value of six pounds of

butter at twelve cents per pound. Sweep the balls on three wires to the opposite side of the instrument, he will have ocular demonstration that three pounds will cost thirty-six cents; and may have his attention turned to the fact that one wire (or pound) bears the same relation to three wires, that twelve balls bear to thirty-six balls.

The arithmometer is a most useful and convenient instrument. The operations to be performed with it, can be performed with marbles, pebbles, or corn grains, the principle is the same; they differ only in facility, and it is to be regretted that in all cases where the one cannot be had, the other is not resorted to. It is the true mode of teaching the rudiments of arithmetical science.

Geography.

I will now ask our readers a few questions on Geography; if these are not enough, they can add more themselves.

What shape is the world?

How is it proven to be of that shape?

How do the people stand on it?

What enables them to stand on all sides of it?

When it is sunrise to the inhabitants on one side of the earth, what time will it be to those on the opposite side?

What are Meridians?

What are parallels of latitude?

What places are in North latitude?

What in South latitude?

What is Longitude?

What is the name of the circle 23 1-2 deg. north of the Equator?

What is the name of the one 23 1-2 deg. south of it?

What is that part of the globe which lies between these circles called?

What are the names of the circles 23 1-2 deg from the poles?

What are the names of the two districts between the polar circles and the poles?

What are the names of the two belts which lie between the Tropics and the Polar circles?

In which of those zones do you live?

Why is the weather warmer in summer than in winter?

Which is the hottest, a district of barren sandy country, or one that is covered with vegetation?

Why?

I would advise all to observe in which direction his shadow falls at morning, noon, and night. Let him think in what direction the shadows of the inhabitants of the south Temperate zone fall; whether those of the people in the Torrid zone always lie in the same direction at 12 o'clock. He might employ his time much less profitably, and if I mistake not, he will find it very pleasant.

If readers have perused attentively what has been said under the head of Geography, they have a pretty good idea of the outline of the science, and are prepared to go to the study of it from globes, maps and books. They are acquainted with the causes of the seasons, and of day and night; with the shape, positions and motions of the earth; with the mathematical divisions of it by meridians and parallels of latitude.

Knowing something of climate, it will be in order for them to learn what are the soils and productions of different countries; also the manners and habits of the inhabitants. It is indeed, on account of the last, that the study of Geography is important.

Now, that you are acquainted with the outline, I would recommend that you should next obtain information of the political divisions of the earth. In doing this, I believe you will find an advantage in learning the names and directions of principal ranges of mountains; also the sources and courses of large rivers. These, well impressed on the mind will be of great service to you, when you come to the details. For example, impress upon your mind that the Alleghany mountains cross North America in a north-east and south west direction; and that the Mississippi river, rising in the western part of the United States, runs southerly into the gulf

of Mexico. While tracing these on the map, you will see the localities of the greater part of the states in the Union. You may do the same with the Andes mountains, the Amazon and Rio de la Plata rivers in South America; and so of other countries. The location of Volcanoes, and principal cities, are also important way-marks in the study of Geography. Never fail to think of all places, with reference to that which you are in yourself.

Astronomy.

CHARLES.—In our last conversation we talked about the different appearances of the moon and the cause of eclipses, all of which I think I understand pretty well. Is the moon supposed to be of any use to us, besides affording us light?

JANE.—It is not known how far the moon is of use to us, and people imagine differently about it. Some think it has influence on every thing upon our earth; they plough, plant and gather by the time of the moon; they make their fences when the moon is on the increase, that they may not settle; they spread their manure when it is waning, or on the decrease, that it may lie close to the soil or sink into it; indeed they do little without consulting the almanac to see how it is with the moon.

C. Do those persons who make so much account of the moon's influences, say that it is from something they think they know of its nature that these effects are produced; or is it the result of long observation on what has happened in the different states of the moon?

J. I believe they profess to know by experience only.

C. So far as you know them, are they persons who would be likely to make close observations?

J. I think not. I am of the opinion that, mostly, they have been educated to the belief in the influences we speak of, and this would incline them to adopt the opinion on less evidence, than would satisfy people who had been differently taught.

There is one certain influence that the

moon has on the earth; this experience is alike every where, where there is a chance to make observations; I mean the tides.

C. Tides? what are they?

J. Risings and fallings of the water of the ocean.

C. I do not understand you.

J. The water of the sea rises and falls twice in less than twenty-four hours; this always happens on the side of the earth where the moon is, and the side immediately opposite. It is accounted for by the moon's attraction, which can move the water, though it cannot alter the shape of the land.

C. How is it known that the water of the ocean rises and falls; every thing on the ocean must rise and fall with it, how then, can it be known that it rises and falls?

J. It is at the shores of the sea that the observations are made; there they can measure how much higher the water is at one time in the day than at another. At Philadelphia the water rises from four to six feet, although it is upwards of 50 miles from the sea and though the sea must be considerably lower at the mouth of the Delaware, than the ground at the city, or the river could not run into it.

C. If the river is running into the sea how can the sea run into the river.

J. It is not exactly so. The swell of the sea rather stops, or dams up the water of the river. It is properly the rise of the river that makes the tide at Philadelphia, but the swell of the sea is the cause of this rise. Sometimes the two currents mix, so that the water is saltish a good distance from the sea.

C. But if the moon's attraction is the cause of the tide on the side of the earth next to it, how is the tide on the opposite side accounted for.

J. I do not know whether I can make you understand what astronomers say about this.

It is thought that there is a center, or middle point in the earth and that the mat-

ter of the globe, whether water or earth, is drawn to this centre, so as to keep up an exact balance around it. Now if one side be drawn away from this centre by the action of the moon, the other side must fall away as much, to maintain the balance. Do you understand this!

C. I think I see it may be so.

J. Then you see as much, I suspect as any body can see about it; no one knows that it is really so.

C. But how is it with the water at other places round the world?

J. They have tides every where. The tides follow the moon and as the earth turns every side to the moon in 24 hours, they have tide at all places.

C. How are the waters one quarter way round the world from where the moon is at any time?

J. If you will reflect a little, you can tell that yourself, I think. The water which is drawn up to make the tide, must come from some other place; what would be the consequence at that place?

C. Why that the water would be low there. And is that the case? Have they low water at some places?

J. Yes. There is just enough water in the ocean to rise to a certain height at its shores. Now if the water be drawn above this medium height at one place, it must fall below it at another; hence they have high and low water every where, called flow and ebb tides.

The waters do not rise and fall equally on all parts of the earth or at all times in the same place. The tides are higher at full and new moon, than at any other times; then the sun and moon are on the same, or opposite sides of the earth and are thought to unite their attractions.

C. Well, all this is very curious; I wonder when I shall be done getting new ideas.

J. Never during your life if you make good use of your senses and cultivate the desire to get useful knowledge.

C. I hope I shall not fail to do both. At

present I have more pleasure in getting new ideas than in eating and drinking.

Black-Pepper.

This is the dried berry of a climbing plant which grows in the East Indies and most of the islands in the Indian Ocean.

Its stem is jointed and throws out roots at every joint. Its leaves are egg-shaped and of a brown colour; and the flowers are small and white.

For the cultivation of pepper they mark the fields out into squares of about six feet. The plants not having sufficient strength to support themselves they must have poles; for this purpose they use a thorny kind of shrub from which the berries hang down in clusters of from twenty to fifty grains. They are attached immediately to the stalk or vine. When young they are green, but turn to a bright red when mature.

After the berries are gathered, they are spread in the sun, which dries, blackens and shrivels them. This is Black pepper. White pepper is the same berry, with this only difference, that the fruit is permitted to ripen more perfectly, when the best berries are selected, and the inside skin stripped off. To enable them to do this, the berries are steeped for several days in salt water. After the skins are taken off they are dried and cleaned for use.

Black pepper is much stronger than white, the skin being the most pungent part; and probably too, the white loses some of its acrid particles in drying, after the skin is removed.

Cayenne pepper is made of various species of the well known Red pepper. It derives its name from Cayenne where it is indigenous, or native.

Education.

By turning to page 22 you will find the article "Old and New ways," toward the latter part of which Francis and Richard talked of improved schools. Many people are thinking on this subject, but they have not yet thought enough a-

bout it, or told their thoughts to each other sufficiently to have agreed upon any plan. Some think that twenty or more men in a place should join together and establish schools of industry and science, such as the boys spoke of in the article alluded to. Others think it would be best for the state to undertake it and provide, as soon as possible, schools of this kind for all its children, rich and poor. They say that education would then cost less money, that it would be better than that which any body now gets, and, best of all, every body would get it.

There is a newspaper printed in Milton Northumberland county Pa. in which some able writers are now giving their views on this matter. They blame the Legislature of Pennsylvania that it has not in forty years done any thing useful for education, and they call upon the members in a very bold manner, to do what the constitution requires and what many citizens expect of them.

They say the time has come when something efficient should be done, inasmuch as the public mind is turned toward the subject, and the difficulty of effecting any thing, must be increased by delay.

They say it has been found by calculation that the price of making a law is upwards of five hundred dollars.* They find that there have been 186 laws passed in Pa. since 1790, relating to education, and hence discover that all the enactments for the declared purpose of promoting this important object have cost the state more than one hundred thousand dollars.

They find too that the Legislature has given upwards of 240,000 dollars to colleges and academics.

They have calculated the compound interest on the sums thus expended since 1790, and find it to be more than 811,000 dollars.

Besides this, there have been grants of 70,000 acres of land which is valued at one dollar per acre.

All these together amount to nearly a million and a quarter of dollars which the state has given in forty-two years in assist-

ing to give education to those who needed no assistance; and which, when given had a certain tendency to raise those who got it above those who helped to furnish the means for obtaining it, but were excluded by their circumstances from participating in its benefits.

After all this expenditure, they say that there are in Pennsylvania TWO HUNDRED AND FIFTY THOUSAND CHILDREN, between five and fifteen years of age, without schooling.

How friendly these writers may be to the "Internal improvement" system, they do not say, but they contrast the willingness which legislators have shown to appropriate money for the public works, with the reluctance they have evinced to raise a fund for education. They say,

"It is a fact that Pennsylvania has spent millions upon millions to make canals, rail roads, turnpikes and bridges and yet she says she is too poor to spend the *one tenth* part of a million to make a great *intellectual* highroad through the understandings of her children! Heavens! what logic! Does she think her citizens are fools?"

I am fond of discussion, and having withal a little appetite for truth, that I should like to hear the best reasoning which could be offered in opposition to the foregoing.

*The pay of the members for the average time spent in making a law, is above this sum. This includes mileage &c.

Composition of Bodies.

In former numbers something was said of "Elementary principles;" we will now examine how some of those simple elements are united to each other in the formation of bodies which occur most frequently in the earthly matters which are best known to us.

When people speak of soils they mean the surface of the earth, as deep as it is usually dug or ploughed. At that depth there is always a portion of vegetable mat-

ter in different stages of decay; so that when geologists wish to know the composition of the earth in a place, they dig below this soil. Dig almost where they will, they find the earth composed of Alumine, Silix, Lime, or Magnesia, or a part or all of them together. It is not to be understood that these ingredients are found pure; the earth almost every where has some color; this it derives from a metallic substance, mostly from iron. The red or yellow appearance of dirt thrown out of wells and cellars, and indeed nearly all of what is called clay is owing to rust, or oxide of iron in it. If it feels sharp and gritty the greater part of it is Silix, in the, form of little grains of sand; if soft and greasy, Magnesia constitutes a considerable part; if on being wetted, it forms a tough mud, Alumine abounds in it. Lime is not plenty in loose earth; it is mostly formed into stone.

Land is good or bad in proportion as these elements are properly mixed together to promote the growth of vegetables. Those which contain Lime are mostly productive; Magnesian lands much less so; if soils are very sandy, the rain water passes through them so readily, that plants suffer for want of moisture; if they are principally clay, the water is retained too long and injures the roots.

The stones and rocks which are on and under the surface of the earth, are composed of the same materials united in various ways. White flint, so common almost every where, is nearly all Silix, whether it be in small pebbles or large rocks. Slates on which we mark, and with which houses are covered, are found in large masses of rock, and contain much Alumine. Soap stone has a large portion of Magnesia in its composition. Limestone and Marble are chiefly Lime.

Mineralogists have a variety of names for bodies which are compounded of simple elements, such as Mica, Talc, Feldspar, Hornblende, &c.

In 100 parts of Mica there are 48 of Silix, 34 Alumine, 9 Potash, 4 oxide of iron. Feldspar consists of Silix 64, Alu-

mine 20, Potash 14, Lime 2. Hornblend contains Silix 47, Alumine 26, Lime 8, Magnesia 2, Iron 15. Particles of these bodies adhering together in masses, have other names; for example Quartz, Feldspar and Mica united, constitute Granite. The addition of Hornblende makes Sienite. Gneiss, differs from them only in the proportions of its constituents, and that they appear in it rather in strata or layers than in grains.

Grammar.

SON.—I fear I shall not be much the better of grammar; I have been learning it a long time now, and I know scarcely any thing of what it means.

FATHER.—I doubt whether you apply to it as diligently as you do to your other studies.

S. I know I do not. I wish very much to learn it, because my mother and you and all my friends are desirous that I should, but I cannot keep my mind on it; right while I am trying to commit my task to memory, I am thinking about something else. I can keep my eyes on the grammar lesson, but not my mind.

F. This will not be so after you understand enough of it to make it interesting. I suppose you have permitted yourself to dislike the study, because you are discouraged at your slow progress. If that is the case you will not understand it soon.

S. I cannot say that I dislike it, but I am discouraged. I know Nouns, Pronouns, Verbs, Adjectives and Prepositions; but I do not know any thing about Participles, Adverbs and Interjections.

I can tell the difference between nouns singular and plural, mostly, but nothing about their case. I don't know what the case of a noun means.

F. It means the situation that a noun is in, in the sentence: "A noun is said to be in the nominative case when it is the agent which performs the action spoken of; for example, "John loves James;" here John is nominative case because he is the agent who performs the act of loving, and James is objective case, because the act of loving, terminates on him, or has him

for its object. That you may see it more clearly, we will transpose the sentence, thus, James loves John; James is now nominative, and John objective for the same reasons as before, namely, that now James is the person who acts, and John receives the action.

S. I see how it is here, but I fear I shall not be able to see it in other sentences; I will try however. I am ignorant about the person of nouns, too; I can't understand what it means.

F. When you speak, you are the first person; the person you speak to, is the second; and the person or thing you speak of, is the third. It is the same if another person speaks, he is first person, and if he speaks to another person of you, then you are third person; so you see you are first, second or third person, according as you speak, are spoken to, or spoken of.

S. I understand this pretty well now, but when we get to parsing in the class I shall forget it; there are so many other things to be attended to that I become confused; it seems as if they were all huddled together in my mind so that I can come at nothing which I want at any time.

F. Learn one thing at a time. You will do no good unless you get clear ideas of what you are learning, and this can only be done, by examining things singly. For instance nouns are in the nominative case when they are agents; objective case when they are objects. Think of nothing else belonging to grammar until you have made a sufficient number of examples to impress this on your mind. If you pursue this course it will become familiar to you and you will be enabled to tell which are the agents and objects in a whole page of a book, with ease. Do the same with the person of nouns and every other part of grammar.

S. Of the persons, moods and tenses of verbs, I know nothing further than that there are such words. In the first place, I see no use in saying that an action has person. A person performs an action, but how can the action have person?

F. It has not: but it must be performed by a person, and he must be the first, second or third person who performs it. According to the usages of our language, each of these has a verb suited to it, and to use the verb which is made to express the action of the first person, to express the action of the second, is not grammar. For example I, (the first person) *love*; Thou, (the second person) *lovest*; He, (the second person) *loves*. It would have made the language easier to say I love, thou love, he love; or I loves, thou loves, he loves, but it is not so. The same might be said about the singular and plural number of verbs. It would do as well to say he love, they love, as he loves, they love, if we were accustomed to it; but we must take the language as we find it; when men conclude it will be better they will make it more simple.

S. I perceive now what I never did before; it is so, because *it is so*. I was looking for a reason, and if I understand you there is none; it might have been some other way, and it would then have done as well, I believe they call such things arbitrary, do they not?

F. Yes; which means by authority, without rule, with whim, caprice; and let me here remind you that all names of things and actions are arbitrary. There is no meaning in the word Horse until we give it a meaning by applying it to that animal; the Germans call the same animal Pferd, which is just as arbitrary. We say the horse trots, but there is no natural fitness in the word, to express that action of the horse, for the Germans say he traps.

S. Can you tell me any thing about mood that I can understand?

F. There is more difficulty in that, as respectable grammarians differ in their opinions about mood; some have three, some four and others five moods; but independently of them all, we can see that actions are spoken of under different circumstances. Sometimes it is asserted that a thing is thus and so, or it is asked whether it be thus and so, in both cases the verb has the same form, and is called by all

grammarians Indicative mood, as you go, will you go? When a command is given, as go you, it is called Imperative mood; and where it is connected in thought with some other verb, as I intend to go, it is said to be Infinitive.

P. Adjectives have three degrees of comparison. I do not understand this as well as I would wish; can you explain it to me?

F. I think I can. A thing is *good*, that is considered by itself, is absolutely good, this is the positive degree. If we compare it with another thing which differs from it in quality, it is *better* than that other thing, or that is *better* than it. This is the Comparative degree. If it is superior in quality to several other things; it is *best* or Superlative.

Review.

The present number contains the dialogue between little Sally Meanwell and her mother. I think it very pretty and instructive, but like many pretty things, there are errors so skilfully or carelessly blended with its beauties, that without due care, the reader will be less of a republican in feeling, after than before the reading.

When we esteem ourselves wise enough, we do not desire to know more. When our circumstances are deemed good enough we use no exertions to better them. Those who think the social system, as it is called, is based on right principles, strive for nothing more than a conformity with the system. This would be correct if the system were known to be intrinsically good, but on no other condition; for if we imagine a social system founded on principles adverse to the happiness of man, deviations from its requirings and permissions could alone procure us the good we are in pursuit of. The quality of the system should be tested in the first place.

It is said that a good rule will work both ways. Let us try it. If we ought to confine our expenses within our income, then may we extend them to the limits of that income; this is the tacit admission of the writer of the dialogue. But if our expen-

ses may equal our income, then must that income be forthcoming to cover the expenses. The only reason why the aristocracy any where are excusable for living more luxuriously than their wealth-producing neighbours, is that they have incomes, that is money coming in; and the only reason why non-producers should have money coming in, is that they may live luxuriously.

Little Sally says, "but why should not papa be as rich as any body else? I am sure he deserves it as well."

If merit does not constitute a legitimate claim to the comforts of life, it would be difficult to apportion them upon principle. But the mother in the dialogue leaves all to accident. Because Mr. Pemberton happens (not by any useful exertion of his own) to be rich, he is entitled to a coach; because Jones does not happen to be rich, and has nothing but his daily labour to depend upon, he must be content with a scanty pittance of "brown bread" to eat, and "rags" to cover himself.

It is well for people to be resigned to their conditions however painful they may be; but where their unhappiness arises from wrong social arrangements, they should only be advised to bear them until they can be remedied. To sit down contentedly and endure that which could be changed for the benefit of all, and which is only wrong because man, who can unmake it, has made it so, is not virtuous resignation; it is stupifying apathy. "*It is so*," is no reason that it *ought* to be so.

If Mr. White spends his time in so useful a profession as baking bread, he ought to have as comfortable things for himself and those who are dependant on him, as any body else. Mr. Shape and his family should be equally well provided for, for the same reason. We are informed of Mr. Meanwell's resources, whence he derives them, but are not as good at least, as those of Mr. Pemberton, I should not be able to respect them much, if we lived in a state of society which was *really* what ours purports to be—one of equality.

COMMUNICATIONS.

Botany.

We are promised a series of articles on Botany, by the writer of the following. They purport to be letters from S. to her friend Mary.—Ed.

My dear Mary,

Among all the studies that have engaged your attention, that of Botany seems to have been entirely neglected, and yet I know of none more deserving of your notice; for in this, as in all the studies of nature, you will not only be made acquainted with the science, which of itself is a delightful one; but will be led to examine for yourself, the objects that surround you, and thus bring into use the faculties you possess for acquiring knowledge—that derived through the medium of the senses. You must already have observed a difference in the appearance and properties of plants and that many that are different, have yet in many respects a resemblance to each other; thus the apple blossom, on account of its resembling a rose, has been called *Rosaceous*, meaning like a rose, and the tulip, from the form of the flower, is called *Lilaceous*, like a lily. This likeness or resemblance of flowers has been employed in their arrangement into families and orders, this arrangement is called the *Natural Method*. The artificial or *Linnean System* is the one to which I shall principally invite your attention as being the most simple and easy to comprehend. It is not here as in the preceding classification that those which resemble each other are classed together; it often happens that those which are in appearance the most different, are brought together in the same class and not unfrequently in the same order. This arrangement depends upon the number and situation of the stamens and pistils. There are little thread-like organs which grow up through the middle of the flower, and are common to all flowers in a natural state, though they are often changed by cultivation; on this account, wild flowers, or those that

are produced every year from the seed, are the most proper for botanical study.

Before attempting a description of the classes it will be necessary to give you some of the names of the different parts of a flower, in order to avoid confusion. There are, upon most plants, not less than three kinds of leaves, during the time of flowering, in which case it seems necessary to have some means of distinguishing them. The green leaves of the plant, which are the most numerous and of the longest continuance, we call *leaves*, the flower leaves are called *petals*, and those that surround the flower before it is blown and afterwards appear below it, are called the *calyx*. All the petals taken together are called the *corolla*. The top of the flower stalk (*peduncle*) is called the *receptacle*. The stamens consist of two parts, the slender thread and the *filament* and the little knob or ball at the end called the *anther*. The *pistil* may be easily distinguished from them by observing that it grows out of a swelled base, or appears to grow out of a little knob instead of having it at the top, though sometimes they have it at both top and bottom. In fixing the names of these parts upon your memory, you would do well to procure a flower with which to compare them. I hope in my next to give you a pretty good idea of the classes and perhaps some of the orders.

S.

There was lately a traveling Menagerie in this city. As might be expected, I encouraged the scholars to see the exhibition, and on their return, while memory was fresh, to write descriptions of the animals that most engaged their attention. Sixteen of us went together and spent between two and three hours in busy examination of the collection.

I selected the following from the articles handed in.—Ed.

Mr. Gilbert,

When we were at the show the other day, I took notice that some were engaged in looking at the Elephant, some thought

the Rhinoceros the greatest curiosity, some praised the Lion, and others thought the tiger more fierce than he. I was pleased with all of them, but I thought the Leopard was the prettiest animal in the collection. I do not wonder that they say it is of the cat kind, for its shape and its motions are very much like those of a cat; but I never saw a creature so beautifully colored in my life. The brown is very rich, and the jet black rings which are so regular over the whole body and head, together with the shining gloss of the whole, make it surpass any animal I have seen. If the Leopard were gentle like the dog, I should think almost every family that could afford it, would have one, but from some crooked faces he made at the keeper, I suspect it would not be safe to trust him.

T. T.

Respected Teacher,

You requested us to choose such animals as we were most interested with, or such as we thought we could describe the best, write what we observed and hand it in for the INCITER. The animal that I had intended to write about has been chosen by one of my schoolmates, and I did not examine any of the others close enough to describe them. I will just say that the three legged animals in the company, the Elephant, the Rhinoceros, and the Camel are each more homely than I could have imagined without seeing them. I could not make up my mind which was the most homely.

The Rhinoceros, low and broad, with his skin, hard as a board, lying in folds over him, and a bump on his nose, was the most stupid looking creature I ever saw; but dull as he is, the keeper took good care not to venture too near him, and there was need enough, for several times he attempted to run at those who passed by him, and his motions were quicker than could be expected from his clumsy appearance. I did not feel too safe though his chain was so strong.

The Elephant was not so large as one or two that have been here before, nor so

gentle; one of the keepers said he would not like to trust strangers too near him if he were not by to keep the animal in order.

I thought camels were brown; I don't think I ever heard of a white camel before. If they all have such pointed bunches on their backs, I can't see how they fasten loads on them, and besides I should not think the creature is strong; but he looks very good humored and a little sorrowful; I felt something like pity for him, but I have said enough about them, unless I had examined them more minutely.

D. H.

14

Friend Gilbert,

I suppose you will not think my taste very good, but I saw nothing in the Menagerie that entertained me more than the Monkeys and their tricks. There was one about as large as a small sized cat, who was as busy as a nailer cracking nuts with a stone that I guess would weigh a couple of pounds. The little chap had to strain pretty hard to lift it, and several times the nut shot away when the stone came down upon it; it was very amusing to see how disappointed he looked, and a little angry too, I thought, at the boys who laughed at him.

When they brought in the first poney he seemed too small to be a horse, but when the other came into the ring, I thought of the man who said of something he saw, that it was "twice as little" as another thing he had been speaking of.

It is very strange that they can learn a horse to do what the brown poney did, but more strange that a monkey can perform the part of a rider so well. I suspect you do not think the time very well spent in training animals to do things which are of no use to them nor us.

L.

Mr. Gilbert,

In compliance with your request, I shall endeavor to give a brief description of the Lion, and as their size and disposition differ in proportion to the temperature of the climate in which they are to be found I

shall confine myself to a description of the one we saw yesterday.

As well as I could judge, he was from five to six feet in length, and between three and four feet in height, his countenance was fierce and bold, as naturalists have always represented it, but he appeared more gentle than I had any reason to expect, as he suffered the keeper to enter his cage without showing any disposition to molest him.

His mane, of which he had an abundant supply, was of a dark brown, the remainder of his hair a dirty yellow color.

The Lion is a native of both Asia and Africa, in the latter of which places he is said to attain to the greatest size. B.

The Bengal Tiger.

The tiger surpasses the lion in beauty, but is inferior in strength. He is a native of Asia and Africa, and never can be tamed, but is carried about as a show. He resembles a cat in shape, and partakes very much of its manners, and nature. The animal is of a savage nature, is not satisfied with enough to eat, but destroys more than he can consume. He is so formidable that he is ready to attack the lion and fight dreadful battles with him, though the latter mostly gets the advantage of him. This animal has streaks running in the direction of his ribs; his eyes are fierce and his tail long. He can carry away an animal much larger than himself.

People have different modes of catching him, one of which is to ride on an elephant to the places which tigers frequent, and when one springs out, to shoot him.

Evening.

The shower is over and the sun is setting behind the western mountains and tinges the clouds with many beautiful colors.

The brilliant rainbow that lately adorned the sky is now almost invisible. The shadows of the trees are growing longer; the shades of evening are fast closing over the landscape and everything is going to rest. The birds are nestling in the boughs of the trees and the inhabitants of this side

of the earth are collecting round the cheerful firesides.

The wind blows cool from the west; hosts of stars are twinkling and the bright moon is just rising above the tall trees in the east, and the waves of the river which were lately so dark, now glisten beneath its mild rays.

F. F.

SELECTIONS.

There is something particularly peaceful in this tale. It may be too simple for those in whom the feelings of gentleness and kindness have never been cultivated. Such as have them developed, will find an interest in the peace inspiring scenes of the village school.

I could scarcely refrain from pity in the case of the adult whose early life had nothing in it which is brought to his mind by a perusal of this tale. He must indeed have been unfavourably surrounded, who has now none of those tendering reminiscences, which call forth sympathy with the incidents of the story.

Is there any one who has not some little "Elmwood" of his own? Some recollection of the scenes and circumstances of childhood which dispose him to gentleness, and incline him to regret that in subsequent life he lost the simplicity and innocence of that artless season?—Ed.

The School.

How pleasant it is to go into a school where good boys and girls are taught to read and write.

Do you see that white house just peeping out beyond the orchard. That is our village school house, and the other white cottage beyond is where the good Mr. and Mrs. Simkins live. This couple teach our dear little children.

Mr. and Mrs. Simkins were once rich and lived in a fine house. They were made poor by bad men, and came to Elmwood. Because they were wise and good, other good people helped them, and put them in that snug house.

You have come here to go to school and must love and obey Mr. and Mrs. Simkins. We will walk up the lane by the

church, and look at the cottage and the school house. There is no school to-day, and we may see Mr. Simkins in his garden.

I was a boy of ten years old, when my friend, not much older, took me to see the church, the school house and the white cottage of Elmwood. I still think I see the white-haired teacher and his white haired wife amid their garden or their school. Let me then give you a short story of the people and the place.

No matter in what state Elmwood was placed. It was a small village along the slope of a hill, round which ran a clear brook: About thirty neat houses straggled in one street, amid orchards, meadows, gardens and fields.

A pretty bank, west of the village was covered with trees, except where stood the church.

By the edge of the wood, on one side of the lane from the village, rose the school house, and on the other the peaceful home of the teacher.

It was a summer's evening, in June, that myself and friend strolled up the lane. The snow white fence before his house, and wicket gate arc now before me, with the mild face of the beloved Mr. Simkins, as he sat in his chair at the door. He was not cross nor proud. He called us to him. Oh, I can yet feel his warm hand on my head.

He told me to come to school and be a good boy. Mrs. Simkins gave us each a rose.

We went to school. There were two rooms, one for the little boys and another for the little girls. Nice drawers for their books, pens, ink, slates, pencils and rulers. How you would be pleased to see such clean pretty children coming up the lane. When our tasks were done, we had leave to go out and play on the green grass under the green trees.

Mr. and Mrs. Simkins had lived so long and kept their school so many years at Elmwood, that the fathers and mothers, as well as their little ones, had learned to read write and be good at the same school.

On Sunday morning too, how pretty it was for us all to go to church.

There we saw the face and heard the voice of another good man saying, "suffer little children to come unto me and forbid them not." We were all so happy. There was no noise at Elmwood. There was joy; every one was kind and gay. Each day was a holiday. How sweet it was to go to school. How sweet it was to go to church. How sweet it was to go to play.

Indeed, so much of goodness, and so very little that was bad, come in my sight or hearing, that I hardly thought of any person but who was kind, cheerful and good.

The houses, gardens, trees, the church, the school house, and the limpid brook, shared my affections. My acquaintance and friendship extended to half a dozen dogs who followed the children to school.

Thus time passed. To my eyes no change was effected in my beloved teacher, or his equally beloved wife. All the grief which seemed to reach any of us, was the departure of such of our school fellows who left us; but that was made up by new ones.

In all the five years I lived at Elmwood, except two or three very young children, death had not taken away any of the people of the village.

I was to stay there one year more, and thought the future seasons would follow as the past. It was a fine Sunday in June, only a few days over five years since I had first come to Elmwood. We were all as heretofore at church, I sat between Mr. and Mrs. Simkins. The service was gone through, but before it was done, some of the older persons perceived that the teacher was ill.

I knew sickness alone by name, but seeing an old man of the village enter the pew, and take Mr. Simkins by the hand, I felt a distress I never knew before. The couple were regarded, indeed, as the parents of the village. Every one crowded around, and that Mr. Simkins was very ill, soon set the children to sobbing. My tears fell for the first time.

He was carried home and laid on his bed. The first words he spoke, was when his aged and trembling partner, of sixty-two years, sat down by him and clasped his fine but withered hand. He reached the other to the preacher, and faintly breathed these words: I thank thee my God, my work on earth is done.

None but himself and his best wordly friend, thought his danger real. His calm and temperate life, of nearly ninety years, gave hope of longer life. Only the day before and he was hale, as in years gone by.

Nearly forty children, from four or five to seventeen or eighteen, were then in the village, who regarded him and his wife with a love sincere, and who flocked with eager haste, on Monday morning to the green hill, but the school house was shut. We lingered in sadness. I do not believe that the smallest boy or girl, felt the least inclined to play.

Some of us that were the oldest, went to the house and as we entered the sweet garden, the door opened, and the old man who had entered the pew the day before, came out. The tears were falling down his aged cheeks.

My dear boys, he observed to us, your father, your teacher, your friend is gone to rest. You will see him no more, until you meet him where death enters not. Go not in my children. I fear, but why should I fear, that Mrs. Simkins and her husband will lie in one grave.

A few more hours, and all that was left of our beloved friends, were laid cold beside each other. Their little flock silently retired to their dwellings. The houses in Elmwood were shut; the labourer ceased his toil and the songs of the birds seemed to be sad and solemn.

THE FUNERAL.

Years had passed away since grief so deep had sunk into the hearts of the people of Elmwood. The morning came when Mr. and Mrs. Simkins were to be seen no more. Their pupils calmly entered into their once delightful home;

these pupils were almost the whole people of the village, old and young.

The sweet smile that had ever dwelt upon their lips death could not change.

Few tears were shed. We took our last look, our last kiss, and the shroud was closed.

Nature itself, seemed to respect the sleep of the good. The winds breathed soft; the clouds in fleeces veiled the sun, as in silence we ascended the hill to the church yard. Our truly good preacher stood at the head of the grave. The coffins were lowered, and the crumbling earth, and heart-felt sobs closed the scene.

Different Stations in Life.

Little Sally Meanwell had been one day to pay a visit to Miss Harriet, the daughter of Mr. Pemberton. The evening proving rainy, she was sent home in Mr. Pemberton's coach; and on her return the following conversation passed between her and her mother.

MOTHER.—Well, my dear, I hope you have had a pleasant visit.

SALLY.—Oh, yes, mamma, very pleasant; you cannot think what a great many fine things I have seen. And then, it is so charming to ride in a coach!

M. I suppose Miss Harriet showed you all her playthings.

S. Oh yes, such fine large dolls, so smartly dressed, as I never saw in my life before. Then she has a baby house, and allsorts of furniture in it. And she showed me all her fine clothes for the next ball; there's a white frock all full of spangles and pink ribbons; you can't think how beautiful it looks.

M. And what did you admire most of all these fine things?

S. I don't know, I admired them all; and I think I liked riding in the coach better than all the rest. Why don't we keep a coach, mamma? and why have I not such fine clothes as Miss Harriet?

M. Because we cannot afford it, my dear; your papa is not so rich by a great deal as Mr. Pemberton; if we were to lay out our money upon such things, we

should not be able to pay for food and clothes, and other necessaries for you all.

S. But why is not papa as rich as Mr. Pemberton?

M. Mr. Pemberton had a large fortune left to him by his father; but all the money your papa has, he gains by his own industry.

S. But why should not papa be as rich as any body else? I am sure he deserves it as well.

M. Do you not think there are a great many people poorer than your papa, who are quite as good?

S. Are there?

M. to be sure. Don't you know what a number of poor people there are all around us, who have very few of the comforts we enjoy? What do you think of Jones the labourer? I believe you never saw him idle in your life.

S. No; he is gone to work long before I am up, and he does not return till almost bed-time, unless it be for his dinner.

M. Well how do you think his wife and children live? Should you like that we should change places with them?

S. Oh no! they are so dirty and ragged.

M. They are indeed poor creatures, but I am afraid they suffer worse evils than that.

S. What, mamma?

M. Why, I am afraid they do not often get as much victuals to eat as they want. And then in winter they must be half frozen for want of fire and warm clothes. How do you think you could bear all this.

S. Indeed I don't know. But I have seen Jones's wife carry great brown loaves into the house; and I remember once eating some brown bread and milk, and I thought it very good.

M. I think you would not much like it constantly; besides Jones's children can hardly get enough of that. But you seem to know almost as little of the poor as the young French princess did.

S. What was that, mamma?

M. There was one year so little food in France, that numbers of the poor people were starved to death. This was mention-

ed before the king's daughters. "Dear me," said one of the young princesses, "how silly that was! why, rather than to be starved, I would eat bread and cheese." She was then told that the greater part of the people in France, scarcely ever eat any thing better than black bread all their lives; and that many would there think themselves happy to get enough of that. The young princess was sorry for this; and she parted with some of her fine things, that she might help the poor.

S. I hope there is nobody starved in our country.

M. I hope not; if any cannot work for a living, it is our duty to assist them.

S. Do you think it wrong for Miss Harriet to have all those fine things? The money which they cost might have relieved many poor people.

M. Miss Harriet has money enough to be charitable to the poor, and to indulge herself in such things as she likes. Might not the children of Mr. White, the baker, and Mr. Shape, the tailor, ask if little Sally Meanwell should be indulged in her pleasures? are you not better dressed than they are, and is not your baby house better furnished than theirs?

S. Why, I believe so; I remember Polly White was very glad of one of my old dolls, and Nancy Shape cried for such a sash as mine, but her mother would not let her have one.

M. Then you see, my dear, that there are many who have fewer things to be thankful for than you have. Every thing ought to suit the station in which we live, or are likely to live. Your papa and I are willing to lay out part of our money for the pleasure of our children; but it would be wrong in us to lay out so much that we should not leave enough to pay for your education and other necessary articles. Besides, you would not be happier if you had a coach to ride in, and were better dressed than you now are?

S. Why mamma?

M. Because the more of such things that we have, the more we want. Which

think you, enjoys most a ride in a coach, you, or Miss Harriet?

S. I suppose I do.

M. But if you were both told you should never ride in a coach again; which would think it the greatest hardship? You could walk, you know, as you have always done before; but she would rather stay at home, I believe, than expose herself to the cold wind, and trudge about in the wet and dirt.

S. I believe so too, and now, mamma, I see that all you have told me is very right.

M. Well, my child, make yourself contented, and cheerful in your station, which you see is so much happier than that of many other children. So now we will talk no more on this subject.

The three Wishes.

BY MRS. C. GILMAN.

ELIZA.

I wish I was a little bird,
Among the leaves to dwell.
To scale the sky in gladness,
Or seek the lonely dell.
My matin song should celebrate
The glory of the earth,
And my vesper hymn ring gladly
With the thrill of careless mirth.

CAROLINE.

I wish I were a flow'ret,
To blossom in the grove;
I'd spread my opening leaflets
Among the plants I love.
No hand should roughly cull me,
And bid my odors fly;
I silently would ope to life,
And quietly would die.

LOUISA.

I wish I was a gold fish,
To seek the sunny wave,
To part the gentle ripple,
And 'mid its coolness lave.
I would glide through day delighted,
Beneath the azure sky;
And when night came on in softness,
Seek the star-light's milder eye.

The end of the Holydays!

The Holydays are over and we must go to school again:

How quick the pleasure has been past;
Yet we were almost tired at last;
And may-be a return to work will not be
so much pain.

To fag from Monday morning, to Saturday
at noon,

Is not an easy job, you know,

But, when 'tis done, and off we go,

How glorious are the sports that last, till
lighted by the moon!

To play all day is stupid play; day after
day is worse;

And, for a month!—nought else to do—

Tops, hoops, and marbles, all gone thro'

'Tis just like riding till you ache, on the
same hobby-horse.

Therefore, good-by, Papa, Mamma; good-
by to life in clover;

Good-by to everlasting play,

There must be toil to make it gay—

To school again!—we're wondrous glad
the Holydays are over.

Wm. Penn said "that which makes a good constitution, must keep it, viz. men of wisdom and virtue, qualities that because they descend not with wordly inheritance, must be carefully propagated by a virtuous education of youth!" Wonder if we have not heard such wise sayings so often, and admitted their truth so lazily and unmeaningly that we are pretty much in the same situation as the duck's back when water is poured on it?

Post Masters do not all understand P. O. regulations exactly alike. Some have thought this periodical should be charged pamphlet postage; others were of a different opinion. I lately enclosed a number to the P. O. Department at Washington, requesting to be informed what the rates of postage must be. I received the following answer:

"The INCITER is considered, by the Department, to be nothing more than a newspaper, and subject to be rated with newspaper postage only."

Send in subscribers names.

THE INCITER.

EDITED BY A. GILBERT, LANCASTER, PA.

TERMS OF PUBLICATION, ONE DOLLAR PER ANNUM, PAYABLE IN ADVANCE.

Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA IN SOCIETY.—*Rising Generation.*

VOL. I.

NOVEMBER, 1833.

No 6.

EDITORIAL.

TO PARENTS.

Industrial Schools.

That the best practical education can be given without expense is not theoretical, it has been tested successfully by experiment.

Emmanuel Fellenberg, an estated person in Switzerland, who was in advance of his generation in his opinions of the quantity and quality of instruction necessary to constitute a good education, sought in vain for an institution of learning which he could approve for his children: he made enquiry for a teacher or teachers and with his own assistance, commenced giving an education under his own roof. The progress of the pupils in rational learning was so superior to that of schools and academies that it soon attracted the attention of the friends of improvement, and applications were made for the admission of the sons of other men.

So much of good result was apparent from the conduct of the school, that Fellenberg, remarkable for his philanthropy, conceived the idea of extending the institution so as to benefit a greater number, and of other classes. Hitherto, none had been inmates of the Hofwyl school, but the sons of the great and the wealthy; his present solicitude was to make accommodations for such as had not the advantage of capital; and at the same time to prevent that feeling of degradation which grows out of dependance. He therefore connected labor in agriculture and the arts with the business of study. He found that profitable employment of time in the recess

penses of boarding, clothing &c. He found also that the health and cheerfulness of the pupils were promoted by the alternation of labor and useful study; they afforded the needful relaxations from both, with the greatest possible economy of time.

The consequence of this wise arrangement was, that many persons, whose moral training would have been neglected, whose minds would have been imperfectly instructed in any art by which to support themselves in comfort, were indebted to the philanthropic Fellenberg for supplying an institution in which they acquired sound moral principles and practical science, together with as good a knowledge of some useful profession, as their apparently more favored neighbors.

If so much could be done by the exertions of a single man in a first experiment, what might not be effected in a community like ours, at a time when public attention is drawn to the subject, & when we may avail ourselves of the experience of the benevolent individual who has trodden the ground before us, and shown that physical, mental and moral improvement, so far from interfering with each other, afford a reciprocity of stimulus?

There were, in 1829 at the Hofwyl institution, 100 pupils in the scientific and practical department, and 117 in the agricultural. These were attended to by forty instructors.

A sketch of the moral government of this model-school could be turned to good account every where. There is no coercion, and the stimulus of rewards and punishment is not need-

ed. The sense of propriety is rendered delicate by an appeal to individual moral perceptions; this, aided by the force of public opinion, has caused pupils of all ranks and sects to meet on the ground of common fraternity and to harmonize in their endeavors for the general good, in due accordance with their different capacities and various destinies.

If the sons of princes and the subjects of Fellenberg's bounty, can be inmates without the knowledge of each other's origin, what is there to prevent the children of the United States from drinking together, at the same fountain head of knowledge, at the same time, on the same terms, and to promote the same end, namely, that they may become really, the citizens of a liberal republic.

To Teachers.

When we tender information or advice, it frequently happens that it is not in our power to tell whether such information and advice may not be superfluous; still it is well to be forthcoming with it, if it takes but little time and is not calculated to disgust or offend. Indeed such conclusion to justify me in that which I am about to do, namely to give you a little of my experience; albeit you may have it in your power to impart more useful information, than I propose to lay before you. Impart it then.

In reading, it will be found advantageous to arrange the pupils, in the class according to the order of their respective attainments. Let the teacher read a short lesson in his best manner, and let them follow him in the same lesson in the order of the class arrangement; by this mode an indifferent reader at the foot, may perform his part as well as his superior classmate at the head. It is best not to let any one pass on without having read as well as can reasonably be expected of him. Cause him to read the same thing over again and again, until he succeeds; this will prevent or cure the habit of inattention.

When the reading is done, cause each one to give a synopsis or abstract of the

lesson; or which is perhaps better; let each one give a synopsis of a part; this increases attention, and improves the memory. After the synopsis has been completed, a definition of all the words not in common use with the members of the class, should be required. It is not of so much consequence that the definitions be neat as that they should afford satisfactory evidence that the definer has clear ideas. If he has failed to define suitably for the class, the teacher may, if he can, supply the deficiency. However little is read, it should be read well, and be perfectly understood.

That which I designed especially to recommend in this article, is the giving of instruction by way of lecture. I have nothing of method to offer, nor shall I attempt detail, but an occasional five minutes spent in addressing the school, on subjects of moral and scientific character I am convinced is of great utility. These oral instructions may be proper several times in one day, or they may be omitted for several days, which amounts to something like this, they should occur as often as the teacher feels ability to develop useful truth, in a manner that will animate and invigorate the pupils.

Some one has said the reason why oral teaching has not been more successfully practised, is that it has been too much spun out—the lectures too long; he says this is like cramming a child to make it grow faster. The idea is a good one, and I have no doubt if competent preceptor, would frequently address their pupils for a short time, that great good would result from it.

Astronomy.

What is the solar system?

What are the names of the planets in the order of their distances from the sun; beginning at the nearest?

How far is the earth from the sun?

What is its diameter?

In what time does it revolve on its own axis?

What does this motion cause ?
 In what time does it make a revolution
 its orbit, around the sun ?
 What is caused by this change of position ?
 What is supposed to be the diameter of
 the Sun ?
 How are Centripetal and Centrifugal
 forces illustrated.
 What are the celestial bodies called,
 which do not revolve around the sun ?
 How can the alterations of day and night
 be shewn ?
 What besides the ball and knitting needle,
 is wanted to illustrate the change of
 seasons ?
 How are the different phases or appearances
 of the moon accounted for ?
 What causes an eclipse of the moon ?
 What an eclipse of the Sun ?
 What are tides ?
 What is the cause of them ?

Believing that the articles on Astronomy
 will be found, if attentively considered,
 contain answers to the foregoing questions;
 and believing too, that their answers
 enliven the general principles of the science,
 I shall leave the subject to our readers,
 hoping that it has claimed the attention
 of a part of them, at least. Before
 part however, I would recommend to
 them to do that which I have too much neglected,
 namely, first getting some one who
 can do it, to point out to them such planets
 as are visible to the naked eye, together
 with some of the constellations or clusters
 of stars; make nightly observations of the
 rising, setting, northing and southing of
 these bodies. By those means they will
 become rational, and, in degree practical
 astronomers. It would be well, however,
 to guard them against becoming absorbed
 in it, for after all, our own globe is a
 very interesting ball, and there are diversions
 devolving upon us, while we inhabit
 it, for the performance of which it is wise
 to prepare ourselves.

I will in addition give a brief sketch of
 the history of astronomy, as I find it in books
 of my possession.

The Egyptians it is believed, were once
 the most skilled in this science of any
 people living at that time, though there
 is no very connected history of their attainments.

Thales, a Grecian, who lived near 2500
 years ago, taught his countrymen that the
 earth was a globe. He appears also to
 have known something of the causes of
 eclipses; but he predicted, rather than calculated
 their time. Like many other
 friends of science and truth, he was persecuted,
 and banished from his country. He was ready
 to offer the result of his observations, before
 mankind were ready to receive them. This is
 no uncommon case. Pythagoras took up the
 subject after Thales was exiled, and reasoned
 very accurately according to the opinions at
 present received as correct.

Hipparchus, is a name well known to
 astronomers. He lived about 2000 years
 ago, and made some very nice calculations,
 which though esteemed erroneous,³ aided
 those who followed him in coming at
 truth.

Ptolemy, is the next who is noticed as
 having advanced the science greatly. He
 calculated the eclipses for 600 years in
 advance.

There does not appear to be much history
 of astronomy from the time of Ptolemy, until
 Nicholas Copernicus, a Polish-Prussian,
 revived the Pythagorean system in the
 eighteenth century. The solar system
 which is now approved, is frequently called
 the Copernican, after him. He spent thirty-
 six years in a peaceful retreat, which
 was bestowed upon him, in astronomical
 observations and meditations. He was also
 persecuted.

Tycho Brahe, a Danish astronomer came
 next. He believed that the sun revolved
 around the earth, and that the planets
 revolved around the sun. His views were
 not generally adopted at any time, and
 though his system is deemed altogether
 erroneous, astronomers acknowledge themselves
 very much indebted to him for

the many exact and useful observations which he made.

Since his time there have not been wanting learned studious men who have endeavored to advance the science; among which are Flanstead, Halley, Bradley and Herschell. It is scarcely necessary to name Newton; whoever has heard the word astronomy, has heard the name of Sir Isaac Newton.

Grammar.

Sox.—Of what particular use is grammar? after we do know what parts of speech the words are, I do not see that it makes us acquainted with their meaning.

FATHER.—No: the use, or design of grammar is not to teach the meaning of words, but the proper arrangement of them in a sentence; or rather to show their government and agreement.

S. There I am at a loss; what does the agreement of words depend upon? Is it arbitrary?

F. Entirely so. I told you in a former conversation that if the usage of the language warranted it, we should be gainers without any loss by having the same form of the verb in all the persons and both numbers; but so the language is not constructed and it has verbs to suit each person and both numbers. When we use the appropriate verb with a noun or pronoun, then the verb is said "to agree with its nominative, subject or agent." When, for instance, we say "I love thee," the verb *love*, *agrees* in number and *person*, with its agent *I*, it is called a verb of the first person and singular number.

When we say "Thou lovest him;" *lovest* agrees with its agent *Thou*, that is, it is the suitable form for the second person singular it requires; a verb to suit it also. "He loves me," here *loves* agrees in the third person singular with its agent, or nominative *He*.

S. Is there not agreement between adjectives and nouns?

F. Yes: Some adjectives suit to apply to one thing, as this, that, one &c; others belong to more than one thing, as these, those, two &c, for example this man, these

men; one man, two men. The noun *man*, is singular; the adjectives *this* and *one*, are singular, to correspond with it. The noun *men*, is plural; the adjectives *these* and *two*, are plural to suit it.

S. What is meant by government?

F. It is when one word causes another to be in a particular case or condition. Strictly speaking, there are no words governed but pronouns, and they, only by verbs and prepositions.

S. I think I could understand it better if you would give some examples.

F. We will take the same we used when we were speaking of the nominative case. I love thee, thou lovest him, he loves me. You remember that *I*, *thou*, and *he* were in the nominative case; *me*, *thou*, and *him*, are the same first, second and third persons they were then, but they have taken different forms to suit their positions in the sentences; they are in different conditions or case. There, the first second and third persons were the agents who performed the action of loving; now they are the objects on which the action is performed; grammarians say they are in the objective case.

S. But do not pronouns sometimes take this form when they do not follow a verb?

F. Yes; when a preposition is placed before a pronoun and has direct relation to it, it causes it to take this form; they are then said to be governed by the preposition in the objective case as, to me; from thee; by him; at her. In these examples, *to*, *from*, *by* and *at*, are prepositions, and cause the pronouns to be in the objective case. It would not be good grammar to say to I, from thou, by he at she.

Nouns are also said to have case. It is true, that like pronouns, they are both agent and object, according to the office they perform in the sentence, but they never change their forms; *man*, *horse*, *house* and all other nouns, remain the same whether they are agents or objects and therefore as a question of grammar there seems to be no necessity for saying

Sometimes when persons wish to do that for their friends which they find it impossible to accomplish, they say „you must take the will for the deed.” In the case of “Amanda” I suppose we shall have to take the *promise* for the deed. She furnished a good article on “Tea,” in No 2, and gave us to expect we should hear from her monthly. We borrowed her signature once since to append to the article “Coffee,” hoping that she would afterwards be forthcoming according to engagement. All expectation of further assistance from her is given up. Why? Is she dead? No. Has she removed beyond the reach of the “Inciter?” No. It is probable she now feels more interest in the *quality* and *prices* of tea, than in its origin—she is married!

It is to be wished that she may be more particular in fulfilling her new engagements.

Arithmetic.

The first thing to notice in arithmetic is, that there are ten figures or characters with which to express the numbers of which we can form an idea.

With 1, 2, 3, 4, 5, 6, 7, 8, 9 and 0, placed in different ways we express all the numbers from one to millions.

The next thing to observe is that all except the 0, have a positive and relative value, which means that each one always has the same value attached to it when it stands alone, which is its positive value, and another value according to its position when used with other figures; this is its relative value; but to render it plain we will make some examples. 1, when it is alone, is always *one*; when placed after 2, 3, 4 &c. it becomes twenty-one, thirty-one, forty-one; but placed before, the same numbers it is twelve, thirteen, fourteen; that is when placed before, or to the left hand of any other figure, its value is changed from one to ten. If placed to the left hand of two figures its value is again increased tenfold, and it stands for a hundred. Placed before it, three figures

or a thousand, and so on; every figure that is put to the right hand of a 1, makes it worth ten times as much as it was before. The same is true of other figures, although they retain their positive value, they acquire relative value, by their position.

The 0, though it has no positive value, increases the value of any series of numbers, if placed on the right hand of them, ten fold, 00's a hundred, 000's a thousand, and so on.

What has been said, relates to whole things, as 1 whole apple, 12 whole apples, 100 whole apples, or any other number: but things may be, and are divided into parts, and when arithmeticians speak of those parts they call them fractions.

There are two kinds of fractions, called decimal and vulgar. A decimal fraction is used only when things are divided into ten, a hundred, or a thousand equal parts; they are like other figures except that they have a dot to the left hand of them. Suppose an apple divided into ten equal parts; then .2 would stand for two of those parts, .3 for three of them, and so on. Now suppose another apple divided into a hundred parts, as before 2 would stand for twenty of them, 22 for twenty-two and 99 would stand for all but one of them. The learner should know that 20 is not a greater part of a whole one than 2 is, for the first is twenty hundredth parts, and if we divide two apples of equal size, the one into a hundred, and the other into ten parts, 20 of the first will be just as much as 2 of the last; then if we place one or more 0's to the left hand of a decimal number it diminishes the value ten fold; .02 for instance stands for two parts of an apple which is divided into a hundred parts; .002 is the expression when the apple has been divided into a thousand, and we have two of them under consideration.

Vulgar fractions are used when a whole thing is divided into two, three, four, or any other number of parts. Suppose an apple divided into four parts and that we want to express one of those parts, it is

done thus, 1-4. Two of them would be 6-4, three of them 3-4 and the four would be 4-4 on the whole. The figure below the line (called the denominator) shews into how many parts the thing is divided; that above the line, (called the numerator) expresses the number of parts we are considering.*

I think the learner should be well acquainted with the figures which stand for fractions as well as those which stand for whole numbers, before he attempts to do much at cyphering. Let him obtain a clear idea of numbers by putting down one two, &c., corn grains as represented by figures he makes; out of a lot of ten grains, let him take two or three, when he makes 2, 3, etc.; from a parcel of four let him take 1, 2 or 3 and while he calls this fractional part, one, two or three fourths, let him make 1-4, 2-4 or 3-4. By such means he will get clear ideas of these expressions.

*Not having the necessary fractions to illustrate the foregoing remarks, we were compelled to substitute them with common figures.—Ed.

Metals.

Some of the earths and their most common combinations have been spoken of in former numbers. The metals are, next to the earths the most abundant substances. They are found almost every where; even when they are not in masses they are diffused through the materials of the globe. As has been said, the color of the earths is owing to some of them; there are besides, other indications of their presence.

Of all the metals, Iron is most abundant, most easily obtained, and most useful to man. If we reflect, we shall find that for almost every comfort and convenience we enjoy, we are indebted to iron. Neither Agricultural, Mechanical, nor Manufacturing operations, could be carried on without it; there is nothing in the arts of life, so indispensable as this metal.

Iron is found in nature in combination with other metals, with the earths, sulphur, carbon and oxygen. When united to sul-

phur, its general name is sulphuret of iron or iron pyrites, of which the brown square pebbles so common in many places, is a specimen. With carbon, it forms carburet of iron or the black lead of pencils, and with oxygen it forms oxide or rust of iron known to every one, and with which almost all elays are colored. The different appearances of this kind of iron ore are owing to the different proportions of the metal and oxygen and to other substances incidentally united with them. In all they are essentially the same.

Pure iron is obtained from all its combinations, by the application of heat. The furnace in which iron is separated from the other ingredients with which it is united, is a deep kiln or pit. It is highly heated by keeping it filled with burning charcoal for a number of days; when it is sufficiently heated, a small quantity of ore is spread over the top with coals over it; when it sinks, more ore and coals are again thrown on continually. By this means the iron is separated from the matters with which it is combined, and becomes liquid. Being heavier than the heated coals it trickles down through them, and forms a bed or mass of red hot fluid metal below. At the proper time a plug which is in the bottom of the furnace, is taken out, and the melted metal flows into channels made in beds of sand, to cool. This is called pig iron. The pig iron is then taken to the forge, where it is again heated to softness, and under the forge hammer, weighing four or five hundred pounds, drawn out into bar iron. In this state it passes into the hands of the blacksmith, who forms it into implements and utensils, for the various uses and purposes of life.

From this bar iron, by combining with it about one sixteenth part of its weight of carbon or charcoal, steel is made.

Iron possesses a quality almost peculiar to it, called its magnetic property. That is, a piece of iron can be so prepared that if it be nicely balanced on a fine point it will uniformly stand in a north and south direction. This metal is eight times heavier than water.

Attraction.

Pour a small quantity of water on a dry table or board, and a smaller quantity near to it, if you then take a knitting needle or small stick and draw a wet line from one to the other, the water of the small portion, will all, or nearly all, run to the larger one. This is called attraction; the larger portion is said to have the power to attract or draw the smaller one to it. The smaller never takes the larger one from its place. That this is so, any body may know; *why* it is so, nobody knows.

There are several kinds of attraction, or the principle of attraction manifests different phenomena; for instance that is called attraction which keeps the planets at their respective distances from the sun. It is attraction which holds the substances which compose the planets, together in a globular form. The same word is used for the adhesion or sticking together of the ingredients which make the different substances of which a globe is composed, and that is called attraction which causes the simple elements to unite together and form new bodies.

Some of the simple elements, when they are brought together under circumstances that favour it, unite, and form bodies entirely different from themselves in properties and appearance. Place together some iron filings, sulphuric acid, (oil of vitriol) and water, in due time the iron filings will not be seen, neither will the sour of the acid be tasted. They will have united together, and with a part of the water will have formed a new body of a green color, called sulphate of iron, (copperas). This is an instance of chemical attraction; it differs from the other kinds of attraction in that it unites substances which are unlike, in one homogeneous or similar mass. The substances thus united, are called the constituents of the newly formed body.

Several bodies thus formed, and entirely different from each other, may adhere or stick together, forming a heterogeneous or dissimilar mass; as rocks composed of various materials. This is cohesive attrac-

tion, and the bodies which are held together by it are called ingredients.

Homogeneous or heterogeneous bodies thus formed, whether in large or small portions, tend or incline to a common centre; that is, if one be separated from the rest on whatever side, it requires force to prevent it from returning; when that force is withdrawn it will return at any time. We call this falling; in the language of philosophy, it is the attraction of gravitation.

Oil passes up the wick of a lamp, and melted tallow up the wick of a candle; if a piece of wetted blotting paper, or a rag, have one end put into a vessel of water, and the other end over the edge of the vessel, so as to touch the ground, the water will in time pass over and leave the vessel empty; these are examples of Capillary attraction.

In all these cases of attraction it should be noticed that nothing is known beyond the fact. Substances of different natures do unite together chemically, and form bodies different from either of the constituents; several ingredients adhere together and form a mass, and a number of these masses aggregated form a world. In opposition to the laws of gravitation liquids do ascend. All these are known facts, and we have names for them; let us not conclude from this, that we know the cause.

[Atmosphere.]

The air which surrounds the earth is called the atmosphere. To what height it extends is not known. Perhaps our readers may not know exactly what is meant by atmosphere. In the first place it is not wind; we are as completely in atmospheric air on a calm day, as when the weather is blustering. The word is used to designate the presence of certain substances which though we cannot perceive them by any of our senses, we can prove by their effects, to exist around us. These substances are Oxygen, Nitrogen and water all very minutely divided by heat; the water into vapour; the oxygen and nitro-

gen into gasses or air. Vapor is not indeed a gas or air, but for the remarks now to be made it is necessary to consider it a part of the atmosphere.

One of the methods of proving that we are surrounded by solid substances in a minute state division is the weight of the atmosphere. This weight cannot be told with scales as other bodies are weighed, because the atmosphere would press alike on the scales. It is done by taking the atmospheric weight or pressure off of some part of the surface of a liquid body, while it remains on the other part.

To give you a better idea of this, if you fill a tin cup half full of water and let down on it a circular board which fits on the inside of the cup so closely that very little water can rise between it and the cup, you may bear all the weight you can on the board without perceiving it sink; this is because the pressure you apply is equal over the whole surface of the water. If you bore a hole in the middle of the board, insert an elder stalk, or some other tube and press on it with only a small part of the force you used before, the board will sink to the bottom; the water is displaced by it; a portion of it passes up through the tube, because the pressure is removed from that part of its surface.

If a hole were bored thirty-two feet high up the body of a tree standing in a pond of water, and no air were in the hole, the pressure of the atmosphere on the surface of the pond would force the water up to the top of the hole or bore. If the tube were empty of air, (a vacuum) there would be nothing to press on the water inside of it, while the atmosphere would continue to press on the surface of the water around it, just as in the case of the board with the tube in it, and the water must necessarily ascend.

If the tube in the tree were made much higher and the air all taken out, the water would not ascend above thirty-two feet. This proves that the atmosphere is as heavy as thirty-two feet deep of water. It has been tried often and is known to be so; it is found that the weight of the atmos-

phere is 15 lbs on every inch square, which is more than ten tons on the surface of an ordinary sized man.

It seems strange to some that we should be thus pressed and be insensible of it, but we are made to require it; if we were in a situation where the pressure was diminished, we should sustain inconvenience from it; we should experience a sensation of fullness, of swelling. Such a sensation is felt by persons on high mountains, and those who ascend in balloons.

It is owing to this atmospheric pressure that the water rises in pumps. The working of the pump merely removes the air from the water in the tube of the pump stalk, while it continues to press on the rest of the water in the well. The upward motion of the bucket would cause a vacuum or empty place, but that the upward pressure of the water fills it. That which is called the sucking of the pump, is but removing the air that presses on the surface of the water in the pump.

The Sheep.

The domestic sheep is so common as not to require a description, but there are varieties in the animal which are worthy of observation.

There has been less attention given to the improvement of sheep in this country than some others, especially England. There mutton is more highly valued as an article of food, than it is with us, and as the manufacture of woollens for other countries is there carried on very extensively, it has been an object with them to grow the greatest quantities of wool of such qualities as are suited to the different manufactures. They have use for long wool to comb for worsteds, and fine wool for broadcloths; hence they have the South down, the Bakewell, the Merino and other breeds of sheep, differing materially from each other in size, form, and quality of their covering.

No country was once so noted for its fine wool as Spain. They had a breed of the animal called Merino, and they were very careful to prevent them from being taken

Abroad. An Ambassador from this country to Spain, procured a few of them to be sent here, but they did not claim the attention of the American people until his return when he bought up all he could find at very high prices. This made the people think they must be valuable.

About the same time Napoleon Bonaparte had his armies in the Spanish country, and to prevent him from taking the sheep to France, the three principal flocks, belonging to the King and two Noblemen, were placed under the care of the English who were then assisting the Spaniards to defend themselves against the French. The English shipped a part of them to England and a part to this country. For a while they sold here at very high prices. Two of my friends and myself bought one of them, for which we paid three hundred dollars. The breed is now spread pretty generally over the country, and they may be had at the common price of sheep. When manufacturing is brought to greater perfection this kind of sheep will be more highly valued; they do not require more food than other sheep; they yield at least an equal quantity of wool, and it is of a fine quality. Many persons know by experience that either fine or coarse cloth wears better if made of fine wool.

Merino sheep may be known by their dark appearance, caused by the dust adhering more closely to them than other sheep, in consequence of a greasy substance which is found in abundance in their wool. They may also be distinguished by the glossy, silky appearance of their noses and legs.

Although the domestic sheep is gentle and timid, the animal is quite otherwise in its native state. The Moufflon, or wild sheep is bold and fleet. It fights fiercely with enemies of its own strength, and flies swiftly from those who are superior to it.

This creature is much affected by climate and condition. In some latitudes the wool is long; in others it differs but little from coarse hair. In some countries they have broad tails, weighing upwards of

twenty pounds, the flesh of which is highly valued by mutton eaters. But under all these varieties, they retain the characteristics of the species; they all part the hoof, chew the cud, and breed together. The domestic sheep is called old at the age of 10 years.

Zoology.

The Opposum is a little animal which has engaged the attention of the curious. It is about the height of an ordinary cat, but much heavier in proportion to its height. The Opposum is of a dark grey color, has a long slender tail, erect ears, short legs and feet resembling the human hand, in form. Its tail is long and without hair; with it the animal can suspend itself from the limb of a tree. The female has an opening or bag under her belly, which she can open and shut at pleasure. Into this her young ones creep for protection. She will walk a considerable distance with six or eight in it after they are the size of ground squirrel.

Another peculiarity of this creature, is that of coiling itself up and appearing to be dead when the huntsman overtakes it. They have often deceived their enemies by this means.

A. B.

COMMUNICATIONS.

An Experiment.

I have for several months past been engaged in teaching a small country school, in which the reading books (not from choice but necessity) have been principally the English Reader and Introduction, in which time I have had a pretty good opportunity of observing the truth of what is said in the third number of the Inciter, that the children do not understand what they read, not even those whose appearance would indicate that they had already passed the period of childhood. As there was no other alternative we could only lament the disadvantages under which we labored, till within two weeks when by chance I came in possession of several numbers of the Inciter; these I distributed

among the scholars and desired them to give attention while I should read a short article, after which I enquired if they understood it, they said they did; I also enquired if they understood their common reading lessons, they as readily acknowledged they did not, since which at their suggestion, we have used no other for our reading lessons than the articles in the Inciter. They are pleased with the change, read with interest, and I feel no hesitation in saying they have improved more in reading in the last two weeks, than in any preceding two months. So far the experiment has been satisfactory. Should others be induced to try it, I doubt not but that they will be equally successful.

Chester County Oct. 18th, 1833.

S. P.

Botany.

The vegetable kingdom is divided into twenty-one classes which as I have already said depend upon the number, and other circumstances of the stamens.

The first ten are known by the number of the stamens, and are named by placing Greek numerals before the word *ondria*, which means stamens, as *Mon*, one; and *andria*, stamen; *Di*, two; and *andria* stamen, &c. It is in these two first classes we find most of these beautiful and fragrant flowers, whose only use seems to be to beautify creation, with the exception however, of the third class; in this we find wheat, rye and a great variety of grasses.

The eleventh and twelfth classes contain an indefinite number of stamens, in the first of which they are situated on the calyx, or green leaves which surround the flowers; in the other, on the receptacle or top of the flower stalk; it is in the first of these we find most of our nicest fruit, such as apples, pears, peaches, cherries etc. The other contains many beautiful and showy flowers.

The two next are distinguished by the unequal length of the stamens, the thirteenth has two long and two short; the fourteenth has four long and two short ones; the first contains a great variety of medicinal plants, known by the common name

of herbs; in the second are many of our garden vegetables as the radish, cabbage etc.

The two next, the fifteenth and sixteenth classes, are united by filaments into sets, or brotherhoods, the first has but one, in this we find the hollyhocks and mallows. The second has two sets or brotherhoods and contains the pea and bean.

In the seventeenth the stamens are united by their anthers, these are called compound flowers, because they are composed of a number of little flowers, so closely united as to appear but one flower, as the sun-flower, marygold, daisy etc. They constitute a large number of the fall flower and are among the most difficult to study; should you therefore meet with some difficulty in studying you need not be discouraged.

The eighteenth differs from any that we have examined: here the stamens are found growing on the pistil. There is not a very great variety in the class; a very common flower, which you have no doubt often seen, the lady's slipper, is an example of the kind.

The two next classes a still more distinctly marked, in them the stamens and pistils grow upon separate flowers. In the nineteenth they are upon separate flowers, yet on the same plant, or as it is called in the same home. Of this kind are the cucumber, squash, pumpkin, melon etc. In the twentieth they are upon different plants, or dwell in separate houses. Of this we have example in the mulberry, willow and many other trees.

The twenty-first and last class contains such plants as have their stamens and pistils too small to be seen with the naked eye, among which are mushrooms, mosses, etc.

Having now given you a general description of the classes which will enable you better to understand their application to their respective *names*, I will now give you a list of them in the regular order.

NAMES OF CLASSES.

DEFINITIONS.

- | | |
|----------------|----------------|
| 1. Mon-andria, | - one stamen. |
| 2. Di-andria, | - two stamens. |

3. Tri-andria, - three stamens.
4. Teti-andria,†
5. Pent-andria,
6. Hex-andria,
7. Hept-andria,
8. Oct-andria,
9. Enne-andria.
10. Dec-andria.
11. Colic-andria, stamens inserted on the calyx.

12. Poly-andria, (Polus, signifies many,) many stamens upon the receptacle.

13. Di-dynamia, dynamia signifies power or length, two stamens longer than the other two.

14. Tetri-dynomia, four stamens longer than the other two.

15. Mon-adclphia, stamens united into one brotherhood.

16. Di-adelphia, two brotherhoods five united anthers.

17. Syn-genesia, syn, together, genesis, growing up, five united together.

18. Gyn-andria, gyn signifies pistil, stamens growing out of the pistil.

19. Mon-oecia, oecia, signifies home, growing on separate flowers, yet in the same house.

20. Di-oecia, having two houses.

21. Crypto-gamia, a concealed union, stamens and pistils invisible.

School time and School exercises.

MARY.—Where are you going in such haste?

ANN.—I am going to school.

M. What time does your school commence?

A. Between 8 and 9 o'clock in the morning, and at two o'clock in the afternoon.

M. Why you are almost too late; it is half past 9 o'clock.

A. Is it? oh that is nothing uncommon for me.

M. Has not your teacher any objections to your coming so late to school?

A. Oh no; he never says a word to me about coming late.

M. Why he must be a very indulgent teacher, to be sure.

A. Yes, he is very good to us when we

behave as we ought, but when we disregard good order, he shows but little partiality towards us.

M. Well, that is right enough to correct you when you do wrong, and when you do well to use you well.

A. He takes a great deal of pleasure in teaching us any thing that is useful.

M. What is it that he learns you.

A. Reading, writing, cyphering, geography, grammar and describing things.

M. What is describing things?

A. We say an apple is round, opaque, and odorous. It consists of four parts; stem, rind, pulp, and seed vessel or core.

M. Why that is something quite new to me. What advantage does your teacher expect to result from descriptions of this kind?

A. He gets us to examine things, and says it will be a great satisfaction to us and enable us to describe them better to others.

M. That is very true indeed, it learns you a great deal and helps you to understand what you read.

A. I have now told you a little how we do. It is already past school time, I must be going.

M. Very well, I will not detain you any longer, you may tell me more when we meet again.

Good Morning.

Good bye Mary.

SELECTIONS.

The following is so much in the manner of Franklin, that it would seem to have come from his pen. Let it come whence it may, it is worth reading and may furnish matter for reflection for a whole winter evening.

Who'll turn the Grindstone.

When I was a little boy, I remember one cold winter's day, I was accosted by a smiling man with an axe on his shoulder. "My pretty boy," said he, "has your father a grindstone?" "Yes sir," said I. "You are a fine little fellow," said he, "will you let me grind my axe upon it?" Pleased with his compliment of "fine little fellow," "O yes sir," I answered; "it is down in the

shop," "and will you, my man," said he tapping me on the head, "get a little hot water?" How could I refuse! I ran and soon brought a kettle full.

"How old are you, and what is your name," continued he, without awaiting a reply. "I am sure you are one of the finest lads that ever I have seen, will you turn a few minutes?" Tickled with this flattery, like a little fool I went to work and bitterly did I rue the day. It was a new axe, and I toiled and tugged till I was almost tired to death. The school bell rang, and I could not get away; my hands were blistered and it was not half ground. At length however, the axe was sharpened and the man turned to me with "now you little rascal, you've played the truant, scud to school or you'll rue it!" Alas thought I, it was hard enough to turn the grindstone this cold day; now to be called a "little rascal," was too much. It sunk deep in my mind, and I have often thought of it since.

When I have seen a man of doubtful character, patting a girl on the cheek, praising her sparkling eye and ruby lip, beware my girl, thought I, or you will find to your sorrow that you have been turning the grindstone for a villain.

When I see a man flattering the people, making great professions of attachment to liberty, who is in private life a tyrant, methinks, look out, good people, that fellow would set you to turning a grindstone.

When I see a man holding a fat office, sounding the "horn on the borders" to call the people to support the man on whom he depends for his office; well, thinks I, no wonder the man is zealous in this case, he evidently has an axe to grind.

Sketches of different Countries.

There are good and bad men among all nations; but still there is a national difference, depending on the government, laws, religion, and settled habits of the people. They all have natural advantages and defects.

Spain, is a very pleasant, fertile kingdom, and produces excellent oranges, grapes, raisins and other articles which we do not raise in this country. Raisins indeed are only a kind of grapes dried.

France enjoys a mild air and a rich soil. It produces large quantities of olive oil, wine, brandy and silk, which we bring from there; and it has produced what is much more important than wine, brandy and silk, many very learned and excellent people. Much also may be said in favor of Germany, and the distinguished scholars educated in the their colleges and schools.

Italy has a fine climate; the winters there are not so cold, nor the summers so warm as ours; but they are subject to dreadful earthquakes, by which whole cities are sometimes swallowed up.

England is noted for its riches, and great trade, and for improvements in learning and arts. The people of England own more ships, and manufacture more goods than those of any other country. The farms are almost like gardens, so well are they tilled. Canals are cut, between all the large cities, for boats to sail from one to another, and the whole island shows what great changes may be made by industry and skill.

Turkey is a delightful region by nature and was once the chief seat of human glory; but no country can prosper without freedom; and a bad government, makes Turkey one of the most wretched portions of the earth.

There, a mad tyrant can put thousands of people to death who have committed no crime. The men in office are generally selfish and cruel. They have hardly any good schools in that whole empire, and a great part of the people grow up in ignorance and vice.

Our country is not without defects; no one is entirely bad; but every other land is subject to some evils from which we are free. No region under the sun is on all accounts so best as the United States, and of all men the American farmers are the most independent and the most happy.

It is true they work hard; but work is good for men; and there are none so miserable as those who have nothing to do.

It is not work, but the foolish dread of it, which fills the world with thieves, gamblers and vagabonds. Idleness is the canker of the body and the soul. This it is that gives men the spleen, and their minds grow dull, as iron becomes rusty when laid by without being used.

The Americans are not subject to a tyrant king, who can rob them of their earnings, or unjustly take their lives; but they can choose their own best men to conduct their public affairs.

In the United States, if the persons in power do ill and break the laws, the people when they vote at elections, can leave them out of office, and put better men in their places; and this is what is meant by having a free government. It is freedom, which makes this country so flourishing and so happy.

Though we are not rich, we have sufficient to live agreeably, and we must work and get more. We need not envy those who have larger possessions; though if we were richer we could do more good; and it is right for people to be prudent, and lay up something against a time of need, if they do not get it unfairly.

The operation of opening an Egyptian mummy was performed in the gallery of Egyptian Antiquities, at Paris, on Sunday last. The Dauphiness and a number of scientific persons attended. The linen bands encircling the body from head to foot being unrolled, the mummy was found to be in a wonderful state of preservation. The nails on the hands were remarkably long, the hair was quite perfect, and had preserved its flaxen color untarnished; eyes of enamel had been substituted for the original, a singularity which had been observed only once before. The most curious circumstances, however, were the discovery of two papyrus manuscripts, one rolled round the head and breast; they were in such preservation as to allow of being deciphered by M. Champollion, jr.; and by this means was found to be

that of Tete-Muthis, daughter of the keeper of the temple of Isis, at Thebes: different marks and ornaments also denoted that she had been one of high consideration among the Egyptians. It is supposed the mummy cannot be less than 3000 years old, notwithstanding which the skin has preserved, in a great measure its elasticity, and even its humidity in some parts. An attentive perusal of the manuscripts will no doubt, bring to light some curious facts, which we shall be punctual in laying before our readers.—*Paris paper.*

MAHOMMEDANS.—A traveller says that during his long residence at Malta, and constant course of commercial transactions with the professors of the Mahomedan creed, he never heard of an unpaid debt or a violated obligation; and it is a usual mode of traffic in the market towns throughout Turkey, for the farmers and hucksters to leave their fowls, eggs, butter, etc. in baskets with the prices fixed, and to return in perfect security of finding the article as they left it or the exact price deposited in the place of just so much as had found a purchaser.

This is not precisely the way we do business here. It is believed that the man who should thus leave his property with the price annexed need scarcely expect to find an exact equivalent; he would scarcely be surprised if goods, basket and price were "among the missing." Would it not be prudent to keep Mahomedans ignorant of this, lest they might annoy us with heathen missionaries?—*Ed.*

Aphorisms.

Contempt leaves a deeper scar than anger.

Custom without reason, is ancient error.

Corrected error serves for a way-mark.

Cheap things, if unnecessary, are too dear.

Doubts should not excite contention, but enquiry.

Every moment subtracts *from* what it adds *to* our lives.

Every deviation from virtue is an approach to vice.

Flatterers are put to flight by adversity.

Good pilots gain much of their reputation from storms.

He who has far to go, should not hurry.

Hearts should not, though heads may, differ.

If sensuality were happiness, beasts would be happier than men.

Idleness is the nest in which mischief lays its eggs.

Keen tools require skilful hands.

Many assume virtue's livery, who shun her service.

Minds ashamed of poverty, would be proud of affluence.

Of all forms *re-form* is the best.

One crime cannot be a proper remedy for another.

Parlour feasts extinguish kitchen fires.

Ridicule is the froth of ill-nature.

We are too apt to imagine that contentment may be found any where rather than at home.

He who makes conscience his counsellor, will find it his comforter when all others stand aloof.

Consider why the error of another offends thee when thou art in no way a party to it.

Power unsubjected to the control of virtue, is a poor guardian of civil liberty.

Some are serious about trifles, and trifling about serious matters.

If we reprove or chastise before we feel a painful regret on account of the necessity for it, the proper season for doing it has not yet arrived.

Truth would be more popular with us, if it proposed only to correct the faults of others.

The two Robbers.

ALEXANDER.—What, art thou the Thracian Robber, of whose exploits I have heard so much?

ROBBER.—I am a Thracian and a soldier.

A. A soldier!—a thief, a plunderer, an assassin! the pest of the country! I could honor thy courage but I must detest and punish thy crimes.

R. What have I done of which you can complain?

A. Hast thou not set at defiance my authority; violated the public peace, and spent thy life in injuring the persons and properties of thy fellow subjects?

R. Alexander! I am your captive—I must hear what you please to say, and bear what you please to inflict. But my soul is unconquered; and if I reply at all to your reproaches, I will reply like a free man.

A. Speak freely. Far be it from me to take the advantage of my power, to silence those with whom I deign to converse.

R. I must then answer your question by another. How have you passed your life?

A. Like a hero. Ask Fame, and she will tell you. Among the brave I have been the bravest, among sovereigns the noblest, among conquerors the mightiest.

R. And does not Fame, speak of me too? Was there ever a bolder captain of a more valiant band? Was there ever—but I scorn to boast. You yourself know that I have not been easily subdued.

A. Still, what are you but a robber—a base, dishonest robber?

R. And what is a conqueror? Have not you, too, gone about the earth like an evil genius, blasting the fair fruits of peace and industry: plundering, ravaging, killing, without law, without justice, merely to gratify an insatiable lust for dominion? All that I have done to a single district with a hundred followers, you have done to whole nations with a hundred thousand. If I have stripped individuals, you have ruined kings and princes. If I have burned a few hamlets, you have desolated the most flourishing kingdoms and cities of the earth. What is then the difference, but that as you were born a king and I a private man, you have been able to become a mightier robber than I?

A. But if I have taken like a king, I have given like a king. If I have subverted empires, I have founded greater. I have cherished arts, commerce and philosophy.

R. I, too have freely given to the poor, what I took from the rich, I have estab-

shed order and discipline among the most atrocious of mankind; and have stretched out my protecting arm over the oppressed. I know, indeed, little of the philosophy you talk of; but I believe that neither you nor I shall ever atone to the world, for the mischiefs we have done it.

A. Leave me—take off his chains and use him well.—Are we then so much alike?—Alexander to a robber!—let me reflect.

A Sketch of the history of America.

Before the people who came from England landed here, this whole country was all a wilderness. No bridges were made over any of the streams; no roads nor any houses except Indian wigwams. There was no plough, nor hoe, nor spinning-wheel, nor loom, nor saw-mill, nor grist-mill, in this whole region.

Thousands of deer, bears, buffaloes, wolves, mooses, foxes, weasels, rabbits, and other animals were running wild in the woods; but with all the fur in the country, the Indians did not know how to make a single hat.

They commonly settled near a river for the sake of fish; or by the sea-shore, where they could catch oysters, lobsters and clams. All the hard work was done by their women. The men loved hunting, which they carried on with clubs, or bows and arrows.

Instead of living together like a band of brothers, through the whole country, they were divided into small tribes, engaged half the time in war, and murdering each other. They were as faithful to their friends as the best white people; but very cruel indeed to their enemies. As to reading and writing, these Indians did not know one letter from another; so they were called savages.

Such was the condition of this country when the first ship-load of Englishmen came to Virginia, in 1607; and thirteen years afterwards another company to Plymouth, Massachusetts. These people had to cut down trees, dig up stumps by the roots, and in a little time began to

build themselves houses, and then churches and school-houses.

It was agreed that the king of England should be the king of this country; but the people here were to worship God in their own way and be free. These conditions were written down on pieces of paper, with the king's name signed to them, and given to those who settled in different places here in North America. These papers were called royal charters. The settlements made according to these charters, were called British colonies or provinces.

To be continued.

Those who have never travelled, nor read of different parts of the world, fancy that the limited portion of it with which they are acquainted, contains more curiosities than any other part. The fable of the mouse illustrates this.—Ed.

A mouse who had lived all his life in a chest, chanced one day to creep up to the edge, and peeping out, exclaimed with wonder: "I did not think the world was so large."

A person once said to a father whose son was noted for laziness, that he tho't his son was very much afraid of work. "Afraid of work?" replied the father, not at all—he will lay down and go to sleep close by the side of it.

If men did but know what felicity dwells in the cottage of a virtuous man—how sound he sleeps, how quiet his breast, how composed his mind, how free from care, how easy his provisions, how healthy his morning, how sober his night, how moist his mouth, how joyful his heart, they would never admire the noises, the diseases, the throng of passions, and the violence of unnatural appetites that fill the houses of the luxurious, and the hearts of the ambitious.

A child should never be indulged in any habit, which it must necessarily cease from, in order to be happy.

The little Factory Girl to a more fortunate playmate.
I often think how once we used in summer-fields to play,
And run about and breathe the air that made us glad and gay;
We used to gather buttercups, and chase the butterfly—
I loved to feel the light breeze lift my hair as it went by!

Do you still play in those bright fields? and are the flowers still there?
There are no fields where I live now—no flowers any where!
But day by day I go and turn a dull and tedious wheel,
You cannot think how sad, and tired, and faint I often feel.

I hurry home to snatch the meal my mother can supply,
Then back to hasten to the task—that not to hate I try;
At night my mother kisses me, when she has combed my hair,
And laid me in my little bed, but I'm not happy there.

I dream about the factory, the fines that on us wait—
I start and ask my father if—I have not lain too late.
And once I heard him sob and say—"Oh better were a grave,
'Than such a life as this for thee, thou little sinless slave!"

I wonder if I ever shall obtain a holiday,
Oh if I do, I'll go to you, and spend it all in play,
And then I'll bring some flowers home, if you will give me some,
And at my word I'll think of them and holidays to come.

The lost Kite.

BY MISS HANNAH F. GOULD.

'My kite! my kite! I've lost my kite!
Oh! when I saw the steady flight
With which she gained her lofty height,
How could I know, that, letting go
That naughty string, would bring so low
My pretty, buoyant, darling, kite,
To pass forever out of sight?

'A purple cloud was sailing by,
With silver borders, o'er the sky;
I thought it seemed to come so nigh,
I'd let my kite go up and light
Upon its fringe so soft and bright,
To see how noble, high, and proud
She'd look while riding on a cloud!

'As near her shining mark she drew,
I clapped my hands—the line slipped thro'
My silly fingers—and she flew,
Away! away! in airy play,
Right over where the water lay!
She veered and fluttered, swung and gave
A plunge! then vanished with the wave!

'I never more shall want to look
On that false cloud, or on the brook;
Nor e'er to feel the breeze that took

My dearest joy thus to destroy
The pleasure of your happy boy!
My kite! my kite! how sad to think
She soared so high, so soon to sink!

'Be this' the mother said, and smiled,
'A lesson to you, simple child!
And when by fancies, vain and wild
As that which cost the kite that's lost,
Thy busy brain again is crossed;
Of shining vapors then beware,
Nor place thy joys on fickle air!

'I have a darling treasure, too,
That sometimes would, by slipping through
My guardian hands, the way pursue,
From which more tight, than thou, thy kite
I hold my Jewel, new and bright,
Lest he should stray without a guide,
To drown my hopes in Sorrow's tide!

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THE INCITER.

EDITED BY A. GILBERT, LANCASTER, PA.

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Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin a NEW ERA SOCIETY.—*Rising Generation.*

VOL. I.

DECEMBER, 1833.

No 7.

EDITORIAL.

To Teachers.

It is not enough that we who assume the task of instructors should be acquainted with what we profess to teach;—we must have the faculty of making it desirable to others to acquire the knowledge which we possess. This cannot be done by imparting to them our ideas, but by showing them the advantages we possess, excite in them a desire to have the same.

Whoever has assayed to make others learned by displaying his own learning before them, ought to have observed that so far as he claimed their attention, it was in the way of admiration of his attainments, rather than interest in the science he was endeavoring to teach. Pestalozzi found in the early part of his preceptorial career that right teaching consisted in ascertaining what clear perceptions were in the pupil's mind, and leading him thence on to others, which though the pupil had not perceived it, were naturally connected with what he knew himself.

The teacher must not only have such discerning faculty as is here alluded to, and make it a point to keep the scholar's attention turned to the knowledge he is to obtain in connexion with that which he already has, but with nice skill to discern the profitable point of excitement, he must possess untiring industry.

It must be an industry too which needs not the stimulus of ambition in any of its shapes; if the pecuniary reward he is to receive for his labour, or the reputation he hopes to acquire, be the motive that impels him to assiduity, little good can be reasonably anticipated from his exertions, however unremitting they may be.

A liquid cannot rise above its own level. It is so in the intellectual and moral world. He cannot be a good teacher in science, who does not himself appreciate the science which he teaches. He cannot inculcate morality instructively, who has not formed a proper estimate of the value of moral principles, nor can he be a good teacher whose bosom is not filled with benevolence;—nothing less than a pervading, abiding sentiment of philanthropy will secure the performance of those duties which the teacher owes his pupils; neither love of learning, desire for fame nor admiration of moral principle are sufficient to animate him in the monotonous routine of school exercises. To any but the genuine lover of his species, the reiteration of A B C, the recital of what he has heard scores of times, the repetitions and re-repetitions that must daily and hourly assail his ears must be monotonous and tedious. *Monotonous*

Besides all this, the diverse natures to be found in the individuals placed under his care, or which is the same to him, the subjects of different systems of discipline, some accustomed to corporeal punishment for slight offences, and others to unlimited indulgence; his ingenuity must forever be on the alert to preserve any thing like moral order in such a motley assemblage. But the worst is yet to come; after he has given his days and nights to study for the purpose of obtaining the needful knowledge of science; if he has penetration to perceive the state of intellectual development in each pupil, and address to lead him on progressively to further degrees of it; if he has adopted a sound moral scheme from conviction, and practices most scrupulously

pulously in accordance with it; if all minor affections are swallowed up in philanthropy, in a word if he devotes his whole time and attention—all his thoughts and feelings to promote the interests of the rising generation, the ignorance, the caprice, or the apathy of parents, if there were no other use for it, would make it necessary that he should have as much philanthropy as could be expected in one human bosom.

Retrospection.

In No. 6 you read the "Little Factory Girl" which is very pathetic and would be very pretty had we not spoiled it in the last line by putting "word" where it should have been "work;" it is not the only blunder we have made, as our readers may have observed. I rely on their good temper to excuse us, and their good sense to correct our typographical errors, but this is not what I took up the pen for.

The little poem was written in England, and was intended to apply to the state of the children in English Factories, and is no doubt a true picture of their life of slavery. Children in this country whose parents are not under the necessity to keep them employed, could hardly be expected to sympathise with those of their own age in a foreign land; who have to toil without intermission, from twelve to eighteen hours in the twenty-four, to manufacture articles of comfort and luxury with which they would not willingly dispense, and which they obtain by merely asking for them, while those who make them have no advantage from it, unless mere means of subsistence, in a state of continual confinement can be called an advantage. Bad as is the condition of children in Manufactories in England, they are out of our sight, and pretty much out of the hearing of most of us. We are in a likely way to have the thing nearer home. Already in some of the manufacturing towns of New England, "The Little Factory Girl" applies with full force. There are, at the present time, in that section of our country, thousands of children who have to toil unremittingly in the

factories without leisure to obtain a knowledge even of reading, under governments that have made provision for the instruction of all their citizens. And why is this? Because their parents are poor and unable to support their children; they are obliged to place them in the factories to make muslin for 12½ cents per yard, for our accommodation. This is so low a price that unless the owner of the Manufactory has much of the work done by children kept constantly at work, and poorly fed, he will not have as much profit as he wishes. He would not sell it so low, and therefore could, if he would, give his hands a better living for less labor, were it not that the manufacturers of Old England (have been longer at it and know better how to get all out of their hands, with putting less in them,) would undersell him. It will not be time lost for you to think of these things. You might enquire whether there is no way to alter them and prevent them from spreading much further. Ask yourselves how it comes that one man can oppress so many children. See whether it be not owing to ignorance. Read the Factory Girl again.

Biography.

I should esteem it unjust to the memory of one of the best of men, to omit telling you that in my opinion, you are indebted for the advantages you possess primarily, to Henry Pestalozzi, who was born at Zurich, in Switzerland, in 1745. This remarkable person, who was born to affluence devoted the early part of his life to observation, reading and study, and by the time he attained to manhood, his acquisitions were above those of other young men in his sphere of life. But he did not seek knowledge for selfish purposes; he conceived the idea very early of being useful in a world where separate and opposing interests keep up a continual conflict between man and man. He resolved to try what education would do for those who had hitherto been neglected; to see whether he could not make honest useful members of society, out of children taken from

the dregs of the people. He imputed to a want of right instructions, the misery with which he saw himself surrounded and of which he heard every one complain.

At the age of twenty-two, he purchased an extensive farm to which he took under his parental care, instructed in useful knowledge, and stimulated to virtue, hundreds at a time, of the class just spoken of. He commenced with fifty children of orphans and beggars, whose physical wants he supplied comfortably and gave them such education as would lead to an acquaintance with their rights and the best manner of performing their duties.

His plan was not less original than successful—he taught the knowledge of *things*—he inculcated the principles of virtue and “practiced what he preached” until the aristocracy itself was compelled to admit the merit and the success of his benevolent exertions, though they pronounced it folly in him to make so great personal sacrifices for public good.

Pestalozzi continued his school at Neu-hoff for fifteen years without any aid but such as he derived from the verbal approval of those who ought to have cooperated with him. His means were at length impaired, and his spirit broken down by the apathy of those who ought to have promoted his benevolent object, and a period followed in which he was comparatively inactive, and probably desponding.

At length he was called by the authorities of one of the Swiss cantons to a situation which they had in their gift. Having popular opinion in its favor, the institution attracted notice; and from Yverdon the name of Pestalozzi and a knowledge of his system, were carried into Germany, France and other countries, in each of which places they found advocates. Lastly, they came to this country, and the system without the name, is being introduced into every school in the land.

Though this amiable philosopher and philanthropist encountered many difficul-

ties and met with much discouragement, he never wanted the consolation and support which are derived from a consciousness of disinterested zeal for the promotion of human happiness.

He died in 1827 in his eighty-third year. His name stands a fair chance to be known to a late posterity, and to be identified with the pursuit of useful knowledge for a long time to come.

The aristocracy of his day and vicinity could not sympathise with him, for his views tended to destroy their power and influence; but so unequivocal was his benevolence, that even they could not oppose him, for though disgusted with the artificial state of society, its heartless enjoyments and vain professions; and though his republican spirit revolted at the pride and selfishness of the higher orders, while it was brought into commiseration with the privations and sufferings of the many—though he was an innovator upon received opinions and usages, “He never affected to despise, but assayed to cure the follies of man.”

The Clove.

“This sharp tasted spice, is the flower bud of a tree in the East Indies, which resembles the laurel in its height, and in the shape of its leaves. The flowers grow in clusters at the end of the branches.

At a certain season of the year, the clove tree produces flowers in abundance. When they are an inch and a half long, they are fit to be gathered. This is done between October and February by spreading cloths on the ground and beating the flowers down upon them with pieces of bamboo. They are then dried by exposure to the smoke of wood fires, and afterwards to the rays of the sun. When first gathered they are reddish; drying changes the color. The oil of cloves is obtained by distilling the flowers.

It is said that the Dutch, who own the Molucca Islands, were desirous at one time to have the clove tree destroyed every where but on their own possessions, in order that they might monopolize the

business of raising them, which at that time was very profitable, but they did not succeed, for they have been carried to South America, to a soil and climate which seem well adapted to the promotion of their growth.

Arithmetic.

In the last Inciter, whole numbers and fractions were treated of; if what is there said has been duly considered, it may be proper to enter upon those called the simple rules of arithmetic; and first,

ADDITION.

If you have five corn grains in one hand, and four in the other, if you wish to know how many you have in both you must find it out by addition; you must either say "the five which I have in one hand, and the four which I have in the other make nine; or else, five and one are six, and one are seven, and one are eight and one are nine; in either of which ways it is addition, and by it you obtain the *sum*, 9. The process is exactly the same, if you wish to know what will be the sum of more, and larger numbers. We cannot think so well of large numbers as we can of small ones, it is therefore necessary to find what will be the sum of portions of them, and then other portions. Suppose we wished to know the sum of 321, 432 and 543. We can easily see that the 1, 2 and 3, last figures of them make 6; the 2, 3, and 4 make 9, which by its position is 90, or the 20, 30 and 40 make 90; the 3, 4 and 5 make 12, which by its position is 1200, that is, 300, 400 and 500 make 1200, then the 1200, the 90 and the 6, make 1296. In addition it is done thus,

Beginning at the right hand
column, say 3 and 2 are 5, and
one are 6, which place immediately under the column; then
4 and 3 are 7, and 2 are 9; place this in
like manner under its proper column;
lastly 5 and 4 are 9, and 3 are 12. All
the learner has to observe regarding the
result of this operation is the positive and
relative value of the four figures in the

sum. The first he will know by their forms, the last by their positions; the 6 is the same positively, and relatively; the 9, by position becomes 90, the 2 becomes 200 and the 1 stands for 1000.

In longer columns, it happens that the sum of the figures is more than ten or tens. In such cases, that which is over one, or more tens, is placed under the column and the tens taken as so many individuals to the next column. The reason of this will be plain with a little observation. Let us take a single column.

Following the directions just given, we have 0 to place under the column, 1 because there is nothing over ten, 3 and the ten is taken as an individual 6 to the next column; as there is no column there to add it to, it is put 10 down as 1, and from its position with 0 counts ten. Had there been another column of 3, 4 and 2 to the left of the given one, it would be, take 1 to 3 make 4, and 4 make 8, and 2 make 10, and the sum would have been 100.

When learners have made a sufficient number of examples to become familiar with the mode of putting numbers together, they may pass on to taking them from each other, this is called

SUBTRACTION.

If I have 9 corn grains in my hand, and take 4 away, how many will remain? On counting it will be found there are 4. But as in Addition large numbers have to be put together to find their *sum*, so in subtraction, large numbers have to be taken from each other to find their *difference*; and in like manner it is done with portions of the numbers. Suppose I wish to know the difference between three hundred and sixty-five and two hundred and thirty-four, I put down the larger, with the 365 smaller under it thus. I say 234 take 4 from 5 and 1 remains, which I place under its proper 131 column; then 3 from 6 and 3 remain; the 3 is put under its column; and lastly, take 2 from 3 and 1 remains. Here, as in addition, the right hand 1 is positively and relatively one; the 3 is thirty by its posi-

tion, and the left hand 1 is one hundred. We will make another example.

When the upper number From 921
in a column is less than the take 674
one below it, as in this ex-
ample, ten are borrowed and 247
added to the upper one, the lower, is then
taken from this sum, and the remainder
placed below, thus. Because the 4 cannot
be taken out of the 1, ten are added, men-
tally, to the 1; then 4 are taken from 11,
and 7 remain. One is now carried to the
7, making eight which cannot be taken
out of 2, and ten are borrowed as before;
now take eight from 12, and 4 remain.
We again carry one to the 6 making it
seven, and say seven from 9 and 2 re-
main.

In the above operation it may be ob-
served that the difference between 4 and
11 is 7, between 8 and 12 is 4, and that
between 7 and 9 is 2, or the difference be-
tween 921 and 674 is 247.

I would suggest, whether it would not
be better to say, take 4 from eleven and 7
remain; and then, as ten are borrowed
from the next figure, call it, (after bor-
rowing ten again) eleven, and say 7 from
eleven and 4 remain. As ten was bor-
rowed, it reduces the 9 to eight, so say 6
from eight and two are left.

MULTIPLICATION,

Is a short method of adding a number
to itself several times. If we wished to
add 346 to itself a few times, it would not
require many figures to do it; say three
times; this would be the way 346
to do it and would require thir- 346
teen figures. By multiplication 346
it can be done with eight. But ———
if we wished to know how 103.8
much it would make added to 346
itself 345 times, it would require 3
ten hundred and forty-four fig- ———
ures, whereas by multiplication 1038
twenty-four would complete the work.

In this operation it will be seen that 6
times 346 are 2076; 40 times 346 are
13840, and 300 times 346 are 103800.
Though we say in the second line, four

times 6, four times 4 and four 346
times 3, it is really forty times 346
those numbers respectively that ———
we take, for though the 4 is ab- 2076
solutely four, yet it is relatively 1384
forty by its position, and its pro- 1038
duct must be one figure to the ———
left of the line above, to expres 119716
their relation properly. This may be said
of the 3, which by its position is 300. By
this arrangement the units or numbers
under ten are added together; the tens are
taken as another column, the same may be
said of the hundreds and thousands; in
each successive line, the product stands
one figure to the left of the one above, for
the plain reason that in it, each figure is
wanted to express ten times as much as it
would do if placed in the preceding line.

DIVISION,

Is the rule for finding how often one
number can be taken out of another. If
you have six chesnuts in your hand, how
often can you take two chesnuts out?
Take out two; repeat the same again and
again; you will have three parcels of two,
which shows that 2 is contained in six
three times. How often can ten be taken
out of 8756?

Short division.

$$\begin{array}{r} 10 \overline{) 8756} \\ 874 \cdot 6 \end{array}$$

Long division.

$$\begin{array}{r} 10 \overline{) 8756} \quad | \quad 875 \\ 80 \\ 75 \\ 70 \\ 56 \\ 50 \\ 6 \end{array}$$

You perceive the results are the same
and they are alike too in the operation, so
far as thinking is concerned. In both cases
we ask mentally how often 10 can be taken
out of 87, (or by its position 8700) and find
it can be taken 8 (800) times, and there
will be 7 (700) remaining. This we place
before the 5 making 75 (750); and find the
10 can be taken out of it 7, (70) times
and leave 5 (50); to this the 6 is
annexed, making 56, out of which 10
can be taken 5 times, and 6 will remain.
Compare this carefully with the two ope-
rations, and I think you will understand
why division is done as it is.

Metals.

COPPER,

Is next to iron, the metal of most use in the arts of civilized life. It is not nearly so abundant in nature, there being but few districts in which it is found in sufficient quantities to make it an object to separate the metal from the matters with which it is found united. It is a tedious process to obtain copper from most of its combinations. First the ore has to be heated in open fires, which the workmen call *roasting*; it must afterwards be washed before it goes into the furnace. The copper mines in Great Britain are extensively worked.

Copper when fresh cut or filed has a reddish orange color and great brightness, but it soon tarnishes and assumes a brown clay color. An important use to which it is applied is for kettles; for though the surface oxidates or rusts easily, it does not penetrate deeply; none of the cheap metals resist the action of the atmosphere, and culinary heat so well. It is soft and pliable, spreading into any form the workman desires. It is one of the constituents of Brass and Bell metal. Copper is nine times heavier than water.

TIN,

Is also a useful metal. It resembles silver in its appearance; but it is softer and lighter, and tarnishes more readily. Melted with lead it makes pewter; a larger proportion of tin, makes the solder used by tinner. The most common and perhaps the most important use of tin is for covering other metals, which are less beautiful, and more easily acted upon by corrosive substances. A coating of tin can be put upon iron or copper by making their surfaces bright, and heating them with tin and rosin until the tin melts. In this way the tin plates are made. A bright surface is put upon sheet iron, which is immersed in vessels of melted tin; in a short time it adheres to the iron firmly. Only a certain thickness can be made thus to adhere. This metal may be known from silver by a crackling

noise it makes while being bent. It is seven times heavier than water.

LEAD.

Is found native mixed with sulphur, when it is called Galena. It occurs in other combinations less frequently; being easily melted it is obtained with less difficulty than some other metals. The common uses of lead are so well known that they need not be recounted here; but it may be information to some that the red lead, the white lead and the litharge of the painters, as well as sugar of lead and several other articles of the drug store, are all prepared from this metal. Lead is very soft and malleable, but has no elasticity. It is twelve times heavier than water.

ZINC,

By some workmen called spelter, is of a bluish white color in crystals or layers. Its principal use is for mixing with other metals. With Copper it forms Brass, Pinchbeck, Bronze and Tutenag, which only differ from each other in the proportions of the metals of which they are composed. Possessing very little malleability or ductility, it is not much used by itself. This metal burns easily with a greenish flame. White vitriol, a very important article of the apothecaries shop, is a preparation from it. Take a small piece of Zinc and a silver coin place them on each other so as to form an angle or opening into which the tongue can be thrust; at the instant the tongue comes in contact with the two an indescribable sensation will be felt; it is neither sourness nor coldness, but the experiment makes one think of both.

It is not very long since the uses of this metal were known. It is seven times heavier than water.

ANTIMONY.

Is of a greyish white, with a blue tint, and is very brilliant. It is neither malleable nor ductile, so that alone it serves few of the purposes of other metals. It is however of great use. With lead it forms the compound of which printer's type are made, and is variously used in the arts;

besides affording several active medicines. Tartar Emetic is prepared from it. It melts at a low heat; with an increased heat it volatilizes or burns away. It is six times heavier than water.

BISMUTH,

Has a reddish tinge. It is not malleable or ductile, but the most fusible of all the metals, a little more than twice the heat of-boiling water is sufficient to melt it. It is but little used in the arts except to form very soft solders. Bismuth, Lead and Tin may be melted together in such proportions that the compound will melt in boiling water. This metal is nearly ten times heavier than water.

COBALT,

Has a reddish tinge, is neither malleable, ductile, or easily fusible. It is principally used for giving the blue color to porcelain and glass ware. The glass which is called smalt obtains its color from an oxide of Cobalt. A preparation is made from this metal called sympathetic ink, which has color only when warmed, when it is green. It is nearly eight times heavier than water.

MANGANESE,

Is little known as a metal, but in the state of an oxide it is used both as colorer and a destroyer of color in porcelain and glass. It is also used in glazing earthen ware. From this oxide oxygen gas is obtained by heating it.

MERCURY,

Is ranked among the metals, though different from all the rest, it is fluid. It has great brilliancy, differing but little in appearance from melted lead.

It becomes solid in the polar regions. Mercury has many important uses, one of which is forming amalgams with other metals. It has the singular property of softening other metals and combining with them; these are called amalgams. With gold it forms an amalgam which may be spread over the surface of a metal which the artist wishes to gild, and on the application of heat the mercury evaporates and leaves the gold adhering firmly. With tin it forms the amalgam with which the

backs of looking glasses are covered. No other metal furnishes so many active articles in medicine; from it Calomel, Corrosive sublimate, and other powerful medicines are prepared. It is mostly found in nature in the state of an amalgam. The miners have a short and painful life. This metal is thirteen times heavier than water.

There are some metals, which on account of their scarcity and their power to resist the action of other substances, are called precious metals; these are Platina, Gold and Silver.

PLATINA,

Is white like silver. It is the hardest, heaviest and most infusible of all the metals. It has considerable ductility and malleability. On account of its high price it is only used where other metals will not supply its place. It is twenty-three times heavier than water.

GOLD,

Is found native in a metallic state, mostly in small grains or sands called gold dust. It then only requires washing to carry off the earthy particles, when it can be melted into masses.

Besides the use of this metal as a coin, it serves as an ornamental or preserving covering for other substances. Great malleability, and the minute division of which it is susceptible, fit it well for spreading over surfaces; and its capability of resisting the action of most corrosive substances, secures for them a lustre that could not be had without this metal.

It is so malleable, that a piece the size of a wheat grain can be hammered out to cover many square inches. It is nineteen times heavier than water.

SILVER,

Is esteemed of less value than Gold though it possesses the properties of malleability, ductility and unchangeableness, in high degrees.

It is the most splendid of all the metals; it is the best, and probably the cheapest material for some cooking and table utensils. Silver leaf, though not so much valued as that of gold, forms a beautiful and useful

covering for those substances to which it is applied. Lunar caustic is a preparation from this metal. Silver is eleven times heavier than water.

Grammar.

CHARLES.—Sister, we got along so well with astronomy that I should like to try something else, suppose we take grammar.

JANE.—I should have thought you could study that yourself. Have you not seen the dialogues between the father and son in the Inciter?

C.—Yes; I have read them very attentively, but have not learned much from them. I thought sometimes that I was just going to understand the subject, but I could not see any thing clearly. I wonder if it begins far enough back for me? I think if I had a fair start at the beginning I could go on. What are Nouns?

J. Nouns are names of things.

C. Are a horse, a tree, and a stone nouns?

J. The *things* themselves are not nouns, but the *words* horse, tree and stone are nouns because they are the *names* of those things. If you were to point at a horse it would not be proper to say "that is a noun;" but if you were to point at the *word* horse it would be. And so it is with every other noun; it is the name of a thing, but not the thing itself.

C. I understand what you say and I think it will be of use to me. I see the difference plainly between a thing and its name. Are not nouns of different kinds?

J. So far as they are names they are exactly alike. Some of them are names of individuals, they are called *proper* nouns; some are the names of classes, they are called *common*.

C. I do not understand that.

J. You are a boy, that is one of your names; but every other boy is a boy too; then boy, is a name common to a class of beings; it is a *common* noun. Your name is Charles, and though you are not the only person having that name, yet there is

no class of that kind; it is your appropriate or *proper* name; Charles is a *proper* noun.

C. I believe I know what singular and plural mean. When we speak of a single one it is singular; when we speak of more, it is plural. Boy, is singular, boys is plural. Gender is plain enough, too; the words boys, girls, men, women and chair, always bring to my mind the ideas of male, female, or neuter, and I think I shall now be able to tell when they are agents or objects.

Will you make me acquainted with the pronouns?

J. Pro. means for, instead of. A pronoun then is a word used instead of a noun. Charles is a noun; when you speak of some action you have performed, you do not say "Charles performed it," but "I performed it." If a person were to strike you, you would not say "he struck Charles," but, "he struck *me*." There are pronouns to suit all the persons; I will make you a table of them which you can commit to memory, and in a short time you will get the habit of using them in their proper places.

First, Second, Third persons.

I,	Thou,	He,	She,	It,	sing.	} Agents.
We,	You,		They,	plur.		
Me,	Thee,	Him,	Her,	It,	sing.	} Objects.
Us,	You,		Them	plur.		

C. Why have the first and second persons singular, each, but two forms, and the third person six?

J. It is that the forms may designate the genders. You say that boys, girls, &c. bring to your mind the idea of gender; do not he, she, him, her, and it, do the same?

C. Yes. But why should not the first and second persons have similar designations?

J. Because the first and second persons are always present; the sex is known; no designation is necessary.

Zoology.

There is no domestic animal which appears to be so little the favorite of man as the hog. For individuals of the other ra-

ces we feel something of affection, but there is perhaps no instance in which attachment was conceived for a hog. The food which is dealt out to him is for the single purpose of benefiting his owner, without any regard for the animal's comfort. There is indeed very little about the creature which is winning, and if he were to receive the kindest treatment, he appears to be incapable of making a return. The instincts of his nature do not seem to elevate him above the mere desire to live; and hence when the supply of his food is abundant, and easy of access, the greatest portion of his time is spent in eating and sleeping. His intelligence is of a very low order, and his habits are filthy and disgusting. He is the least delicate of all domestic animals in his eating, for when supplied with the best of food, he will eat greedily that which would be rejected by others even in a state of want. He subsists on vegetable and animal food.

Unprepossessing as the hog is, we are indebted to him for many of the luxuries of life. Besides the meat which he supplies, his fat enters into the composition of many of our most luxurious dishes; without his bristles, we should have to find substitutes for all kinds of brushes. Shoemakers and saddlers would be at great loss were the animal to become extinct.

The flesh of the hog is rejected as an article of food, by Jews and Mahomedans; they both abstain from the use of it because their sacred books prohibit it.

In its native state, the animal is not so large as some domestic hogs; uniformly of a dark grey color; delicate in its eating; solitary in its habits, and though it never attacks, makes a determined and powerful defence against an enemy. Hunting the wild Boar in Russia is a favorite sport with the nobility of that country. They pursue him on horseback, armed with spears and though they hunt him with heavy mastiff dogs, it frequently happens that he destroys several of them before his life is taken. His tusks are often ten inches long.

The female of this species has commonly near a dozen young ones at a time twice a year; these attain to their growth in the second year, and have afterwards been fattened to weigh 1000 lbs. From one to three hundred is the usual weight of the hogs that are killed with us.

COMMUNICATIONS.

Botany.

Each of the classes which were the subject of my last letter, are divided into two or more Orders. The orders of the first twelve are taken from the number of the pistils. These are named by prefixing Greek numerals to the word Gynia which signifies pistil, as Mono-gynia, one pistil, Di-gynia, two pistils, and so on as before.

The orders of the next two classes, the 13th Di-dynamia, and 14th Tetra-dynamia, depend altogether upon different circumstances. They have each of them but two orders; in the first, they are named from the circumstance of the seed being covered or not covered. The 15th is called Gymnospermia, from Gymno, which means naked, and Spermia, a seed, and signifies that the seeds are not covered. In a spear of Peppermint, you will find an example of this kind, } there you will see four small seeds lying in the bottom of the calyx, after the flower has gone, without any other covering. The 2nd order is called Angiospermia, from Angio, which means bag or sack, this implies that the seeds are covered or contained within a pericarp or capsule, which are the names given to the substance we usually find around the seeds. An apple is a pericarp, as it encloses and preserves the seeds until they are ripe, so do the husks of peas and beans, but this kind is called a capsule, because when ripe they open of themselves.

The orders of the 14th class, Tetra-dynamia, depend upon the shape of the pod, the 1st is called Siliculosa meaning a roundish pod, the 2nd Siliquosa, a long pod:

The orders of the 15th, mon-adelphia and 16th, Di-adelphia, depend upon the number of the stamens. The classes you will recollect were taken from the circumstance of their being united into sets or brotherhoods. The orders then depend upon the number which compose the brotherhood, and are called as in the classed Mon-andria, Di-andria. &c.

The 17th class, Syn-genesia, has five orders which are distinguished by the different circumstances of the little flowers which distinguish this class. The 1st is called Equolis, from the pistils and stamens being equal, that is each floret, (little flower) containing both stamens and pistils. The 2nd, Superflui, have the florets of the disk, or those in the centre equal, while those round the edge or of the ray contain only pistils, which without stamens are superfluous.

3. Frustranea. In this, the florets of the disk contain both stamens and pistils, while those of the ray have neither, and are therefore frustrated or useless. 4. Necessaria. Florets of the disk are staminate or contain stamens, and those of the ray pistillated or contain only pistils, therefore both are necessary to the perfection of the first. 5. Segregata. In this order each floret has a separate calyx.

The orders of the 18th class Gyn-andria, the 19th Mon-oecia, and the 20th Di-oecia, depend like the 15th and 16th classes upon the number of the stamens.

The 21st class Crypto-gamia contains six orders.

1st. Felices, including all ferns, having the seeds upon the leaves.

2. Mosci. Mosses.

3. Hepaticae. Liverworts or succulent mosses.

4. Algae. Sea-weeds.

5. Lichens. Lichens found growing on the bark of old trees.

6. Fungi. Mushrooms, mould, blight, &c.

This last class with its orders is not understood so well as the preceding one, and therefore less interesting. I would not therefore recommend them to your partic-

ular notice until you have become perfectly acquainted with the others.

Use of the Senses.

WILLIAM.—Oh dear papa, the post man has brought us another number of the Inciter, and sister and I have been very much entertained in reading it. We are very much obliged to you for taking it for us. There is nothing that we read with so much pleasure, or from which we learn so many new things.

FATHER.—I am glad my children that you find it a source both of amusement and instruction and while this is the case I fear not but that you will read it with attention.

SUSAN.—We do read them with attention, and we understand the most of what we read, but there are some articles which we do not quite understand. The one on astronomy I do not understand at all; I wonder if it is because I am not so smart as Charles was.

W. No papa, I think it is because they had the experiments to explain the things. I can always understand things better when I see them with my own eyes, than when I only read of them. Will you not assist us, papa, in making the same experiments? I will get a hoop and some blocks, and sister will bring a candle.

F. I am happy my dear children, to see you so bent on improving yourselves. I would willingly assist you but that I think you will not need it. Get your hoop and do as Charles was directed and then if you are not able to satisfy yourselves, I will assist you.

W. Well papa, we have got through, I think we understand it all very well now. Sister concludes she is not so dull as she thought. She has learned something besides the motions of the earth and moon, she has learned to have a better opinion of herself, and to be more like the Susan we read of in No. 2 of the INCITER.

S. And one thing we have both learned, brother, and that is not to pass over any thing without understanding it, when it

requires only a little pains to make us understand it, and surely the pleasure we now feel, well repays us for all the trouble we have been at, if trouble we ought to call it.

W. Yes, if those who write for children would only write in a plain simple way and use such instruments to explain things as we could obtain, and manage ourselves. But when they make use of the Orrery, the air pump, &c. I know no more after, than before they begun, because I have never seen them. I understand now how flies walk under the ceiling, but I did not until sister explained it to me. How she came to know about it I don't know.

S. I know no more than what we there read, and what I have observed myself. I have often noted that when I have taken a tea cup from hot water and placed it with the top down upon the table, that the air bubbled out from under the edge, I could account for this, for I have before learned something about heat expanding bodies, but I could not understand why, after it had stood for some time, that I should be unable to raise it until I had first drawn it to the edge of the table, and that I could then raise it without any difficulty. Since I read there of the pressure of the atmosphere, I can satisfy myself with regard to my tea cup, the air being partly heated by the expansion of what was within the cup, was afterwards kept down by the pressure of that from without. From this too, I think I can form some idea of an air pump. The tea cup, I should suppose would answer to that of the bell glass, or receiver which fit closely to the floor, while the air pump does nothing more than exhaust the air more entirely. Am I right papa?

F. You have explained the subject very well my daughter, and have done equally well in being able to bring your own observations to your assistance. Continue to do so and you will stand a fair chance of becoming intelligent. But you, my son, are not to attribute it always to the fault of the writer, when you do not quite under-

stand him. It is a very difficult matter for a person to write so as to suit the capacity of all children. You saw that where your sister found the most difficulty, you were able to assist her, and she, in this case, has done the same good turn for you. This should learn you to be willing to receive instruction from persons who are even younger and in many respects more ignorant than yourselves, for there are few persons so ignorant but that we might, if we would, learn something from them. As to the apparatus, or the instruments as you call them, for explaining things, I greatly regret that our school is so indifferently supplied with them, I hope, however that it will not long continue as it now is, but that you and all other children in our country may enjoy the blessings of good well regulated schools, but we have continued our conversation long enough for the present.

An evening Walk.

A. Where have you been so late this evening?

F. I have been taking a walk.

A. What time did you start?

F. About 5 o'clock.

A. Did you see any flowers?

F. Yes a number of various kinds.

A. What kinds did you examine?

F. The rose, the lily, the lady-slipper and others.

A. Did you find any minerals in your walk?

F. Yes.

A. What kinds did you collect?

F. White flint and white limestone.

A. How do you tell the difference between flint and limestone?

F. Flint is harder than limestone. I can cut limestone with my knife, and strike fire with flint.

A. Did you ever see Felspar and Rhomb-spar?

F. Yes.

A. In What do they differ?

F. Felspar is semi-transparent, and Rhomb-spar is opaque. Felspar is much

harder than Rhombspar.

A. These are plain distinctions. I think it is time to go home.

F. I think so too.

Good evening.

Wilmington.

This little city is situated on Christiana creek, a tributary stream of the Delaware, about a mile and a half from its entrance into that river. It commands a fine view of the Delaware, and the inhabitants can see all the vessels that pass from and to the ocean.

Behind it runs the Brandywine, a stream memorable for a great battle which was fought on its banks in the revolutionary war. Opposite the city a bridge crosses the river, and a few yards below it are several large mills, much celebrated for their wide range of custom.

The scenery of this stream is very picturesque and wild, the water sometimes flowing over large rocks which lie in its channel, and winding along beneath flowering bushes and trees, white with foam.

A short distance up the river, is situated a paper mill, where a great deal of fine paper is manufactured, farther up still is a snuff manufactory. The banks in some places are steep and rugged.

Wilmington is a place of considerable commerce, and contains more than seven thousand inhabitants.

There are no buildings of great beauty, though none of them present that filthy appearance seen in some of our larger cities.

There is also a powdermill in the neighborhood of it, which was blown up three times.

R. O.

I am obliged to my little friend, the writer of the following communication, for the history of his travels. I am pleased with it inasmuch as it may encourage others to do as he has done—write where they have been and what they saw. They will see that an account of a little boy's

travels may be so given, as to make it interesting, provided he has been observing. I trust it will have another use. It may lead some young readers to their maps, and starting with our tourist, endeavor to trace his journeyings; this will bring their knowledge of Geography into practical use; but there are so many reasons why little boys and girls should write about what they know, that want of time and recollection render it impossible for me to name them all.

EDITOR.

The Journey.

New York, Nov. 9th, 1833,

Amos Gilbert,

I am going to tell you of my journey to the country. First I took the steamboat at New York, sailed up Long Island Sound and entered the Connecticut river. We stopped at a number of places along the banks of the river to take in passengers, and at length we arrived at Hartford. We staid at Hartford over night, took the stage the next morning and rode about 40 miles. We then stopped at Ware. At this place we took stage again and rode about 6 miles when we arrived at West Brookfield, Mass. I saw a great many things that were new to me. At Western I saw all my friends. I then went to Southbridge, a manufacturing town. They have both woolen and cotton manufactories there. I remained there half a day and then returned to Brookfield where I staid a day and a half. Then I started for New York and came by the way of Springfield, a manufacturing town, situated on the Connecticut river. The Arsenal, where they manufacture guns for the troops of the United States is in this place. From Springfield I came on to Hartford, where there is a bridge which is near half a mile long. The next morning I took steamboat, came down Connecticut river into Long Island Sound, and in 8 hours after we found ourselves in New York.

J. W. B.

The Thrush.

Where the forest boughs bend
 O'er the rivulet's breast,
 And the cool balmy wind
 That comes from the west,
 Scarcely ripples its surface;
 The brown thrush is seen
 To rest on the wild rose
 With leaflets of green.

When the sun first shines
 In the eastern sky,
 His warbling is heard
 On the tree top high;
 Then away he soars
 To the misty cloud,
 And his song through the sky
 Swells clear and loud.

And when Autumn comes
 And withers the flowers,
 He flies to the south,
 To the orange bowers,
 And sings to his mate
 Round the shady eaves
 Of the Indian's home
 'Mid the summer leaves.

R. N. S.

SELECTIONS.

A Sketch of the history of America.

For about 150 years the colonies continued in this way, working hard and suffering many evils. One English king after another passed away, and a new king was seated on the throne. In these American colonies, the people grew old and died; their children became men and women, and took their places under the same royal charters.

King George the third received the crown of Great Britain, at the death of his grandfather. He had a set of men, called his ministers, or counsellors, to help him contrive plans and govern his kingdom. They attempted to make the people of this country pay taxes to them. Many other acts they did contrary to the rights of our people.

This conduct dissatisfied the Amer-

icans. They said, 'If King George can compel us against our will, to use paper with his stamp upon it, and make us pay a tax for that stamp; and if he can make us pay him three pence, sterling money, for each pound of tea we use, and which he has no right to; by the same rule he might take our cattle from us, and drive us from our farms.'

They said, 'the British government has no right to tax this country; we have a right to be free; we will be free; and we will not pay this tax.'

When the king and his counsellors were told what the Americans had determined, they were greatly offended. The men called the Lords, and others called the Commons, five or six hundred of them in all, met with the ministers, at the parliament house, in London, and made a declaration that they had a right to compel the Americans to do whatever they said.

The news of this affair came across the Atlantic by the first ship to this country, and our people began to prepare for very serious difficulties. They chose their wisest men to meet and agree, in behalf of the people what was to be done.

These men wrote to the king, saying they thought that the persons about his palace, whom he listened to, did not know the particulars of our affairs, and were filling his ears with very wrong stories. At the same time they also wrote to the inhabitants of England, Scotland and Ireland, and said they hoped the people there would not help the king's bad advisers to practise their unjust and cruel schemes against the Americans.

But for fear of the worst, the colonists prepared as well as they could to take care of themselves. They collected powder and bullets, guns and swords, fises and drums, so that if the king's armies should attempt to kill them, or chain them and make them slaves, they could defend themselves.

The king's officers and soldiers, with their red coats, came in great numbers to force us to submit. The British army took possession of Boston, and sent a party to

soldiers out about twenty miles, to take the powder and other things which the Americans had collected at Concord.

By the way they met with a company of American militia, at Lexington, paraded on the green by the meeting house. The British fired upon these and killed eight men on the spot. A number of others were badly wounded. This affair happened the 19th of April, in the year 1775.

The war was now begun, and both parties exerted themselves with great vigor. Many bloody actions took place. Our people again chose their ablest men to meet and devise the best plans in their power to promote the American cause.

to be continued.

Arithmetic.

Much time is usually lost in the study of arithmetic, because a knowledge of the proportion and relation of numbers to each other, is not early inculcated by means of visible objects. Children should be taught, almost from their infancy, to add; subtract, multiply and divide, small numbers of apples, plums, stones, blocks, &c. When they see that two plums added to six plums, make eight plums, an impression is made on their minds, which prepares the way for progress. Most people suffer all their lives for want of this tangible teaching. In this respect Holbrook's apparatus has done great good; but a thinking teacher cannot fail to observe that the world around him is filled with apparatus. Not an object on which his eye rests, but may be made to afford useful lessons of instruction. Not a pebble or flower exists in Nature's book, in vain.

It is not probable that the following is strictly true, but something very much like it happens to every good tempered, kind hearted boy or girl. If they will take notice they will find they always feel comfortable when they do every thing in their power to benefit others. Young people miss a good deal of instruction, I think, by not comparing their feelings after a day spent in doing good actions

and another in which they feel indifferent about the happiness of other beings. I have not the least wish that any of our readers should believe a thing is so because I say it, but I will just tell them that my experience is, if we do all that we know to be right, and avoid every thing we know to be wrong, we shall have pleasure in it, even though there is much in our circumstances which we should like to have changed. Only tell them this to encourage them to try it. If they do not find it so, I have no more to say.—Ed.

The Good-natured Boy.

A little boy, whose name was James, went out one morning to walk to a village, about five miles from the place where he lived, and took with him in a basket, the food that was to serve him the whole day.

As he was walking along, a poor little halfstarved dog came up to him, wagging his tail, and seeming to entreat him to take pity on him.

The little boy at first took no notice of him; but at length seeing how lean and famished he was, he said this dog must be very hungry; if I give him part of my dinner I shall be obliged to come home hungry myself; however as he seems to want it more than I do, he shall have a part of it.

Saying this, he gave the dog part of what he had in the basket, who ate it as if he had not tasted victuals for a fortnight.

James went on a little farther his dog still following him, and fawning upon him with the greatest gratitude and affection, when he saw a poor old horse lying upon the ground and groaning as if he was very ill. He went up to him, and saw that he was almost starved and unable to rise. "I am very much afraid," said the boy, "if I stay to assist this horse, that it will be dark before I can return, and I have heard there are several robbers in the neighbourhood. However, I will try; it is doing a good action to try to relieve him.

He then went and pulled up some grass which he brought to the horse's mouth, who immediately began to eat with great relish; as his chief disease was hunger.

He then brought some water in his hat, which the animal soon drank up, and soon seemed to be much refreshed, and after a few trials, he got up and began to eat grass.

James then went a little farther, and saw a man wading about in a pond of water, without being able to get out of it. "What is the matter, good man?" said James to him; "can't you find your way out of the pond?"

"No, God bless you, my good little master," said the man; "for such I take you to be by your voice. I have fallen into this pond, and know not how to get out again, as I am quite blind, and am almost afraid to move for fear of being drowned."

"Well," said James, "though I shall be wet to the skin, if you will throw me your stick, I will try to help you out of it."

The blind man then threw the stick to the side where he had heard the voice; the little boy caught it, and went into the water, feeling very carefully before him, lest he should go beyond his depth. At length he reached the blind man, took him by the hand, and led him out.

The blind man then gave him a thousand thanks, and told him he could grope his way home; and James ran on as hard as he could, to prevent being too late.

James had not proceeded far before he saw a poor sailor, who had lost both his legs in a battle at sea, hopping along on crutches.

"God bless you my little master," said the sailor; "I have fought many a battle in my country's defence, but now I am crippled, as you see, and have neither victuals nor money, although I am almost famished."

The little boy could not resist the impulse to relieve him; so he gave him all the victuals that he had left, and said, "God help you, poor man! this is all I have, otherwise you should have more."

He then ran along, and presently arrived in the town he was going to, did his errand and returned towards his own home, as fast as he could. But he had not gone much more than half-way, before the night

shut in very dark, without either moon or stars to light him.

The poor little boy did all that he was able, to find his way, but lost it in turning down a lane which brought him into a wood, where he wandered about a great while, without being able to find any path to lead him out.

Tired out at last, and hungry, he felt himself so feeble, that he could go no farther, but sat himself down upon the ground and cried most bitterly.

Here he sat for some time, till at last the little dog, who had never forsaken him, came up to him wagging his tail and holding something in his mouth.

James took it from him and saw it was a handkerchief nicely pinned together which somebody had dropped, and the dog had picked up.

Upon opening it he found several slices of bread and meat, which he ate with great satisfaction, and felt himself much refreshed with his meal.

"So," said he, to his dog, "I see that if I gave you a breakfast, you have given me a supper, and a good turn is never lost, even if it is done to a dog."

He then once more tried to find his way out of the wood, but it was to no purpose; he only scratched his legs with briars, and slipped down in the dirt without being able to find his way out.

He was just going to give up all hope of getting home, when he happened to see a horse feeding before him; and going up to him, he saw, by the light of the moon, which just then began to shine, that it was the very same that he had fed in the morning.

"Perhaps," said James, "this horse, as I have been so good to him, will let me upon his back, and he may bring me out of the wood, as he must know the way." He then went up to the horse, speaking to him and patting him, and the horse let him get upon his back; and then went slowly along through the wood, grazing as he went, till he brought him to an opening which led him to the road.

James was much rejoiced at this, and

said, "If I had not saved this creature's life in the morning, I should have been obliged to stay here all night; I see by this, that a good turn is never lost."

But the poor little boy had yet a greater danger to undergo; for as he was going along a dark lane, two men rushed out upon him, laid hold of him, and were going to strip him of his clothes. But just as they were beginning to do it, the little dog bit the leg of one of the men so hard, that he left the little boy, and pursued the dog, who ran howling and barking away.

At this instant a voice was heard that cried out, "There the rascals are, let us knock them down! which frightened the remaining man so much, that he ran away, and his companion followed him.

James then looked up and saw it was the sailor, whom he had fed in the morning, carried out upon the shoulders of the blind man, whom he had helped out of the pond.

"There, my lad," said the sailor, "God be thanked! we have come in time to render you a service, in return for what you did us in the morning. As I lay under a hedge, I heard these villains talk of robbing a little boy, and from the description I concluded it must be you; but I was so lame that I should not have been able to get here in time to help you, if I had not met this honest blind man, who took me upon his back while I showed him the way."

James thanked them heartily for thus defending him; and they went, all together to his father's house, which was not far off, where they were all kindly entertained with a supper and bed.

The little fellow took care of his faithful dog as long as he lived, and has never forgotten that we must do good to others, if we wish them to do the same to us.

Disappointment.

Oh! ever thus, from childhood's hour,

I've seen my fondest hopes decay;

I never loved a tree or flower,

But 'twas the first to fade away.

I never nurs'd a dear gazelle,

To glad me with its soft black eye,

But when it came to know me well,

And love me, it was sure to die!

The Pebble and the Acorn.

"I am a Pebble! and yield to none!"

Were the swelling words of a tiny stone;

Nor time nor season can alter me;

I am abiding, while ages flee,

The pelting hail and the drizzling rain

Have tried to soften me, long, in vain;

And the tender dew has sought to melt,

Or touch my heart; but it was not felt.

There's none that can tell about my birth.

For I am as old as the big, round earth.

The children of men arise, and pass

Out of the world, like the blades of grass;

And many a foot on me has trod,

That's gone from sight, and under the sod!

I am a pebble! but who art thou,

Rattling along the restless bough?"

The acorn was shocked at this rude salute,

And lay for a moment, abashed and mute.

She never before had been so near

This gravelly ball, the mundane sphere,

And she felt for a time, at loss to know

How to answer a thing so coarse and low.

But to give reproof of a nobler sort

Than the angry look or the keen retort,

At length she said in a gentle tone,

"Since it has happened that I am thrown

From the lighter element, where I grew,

Down to another so hard and new,

And beside a personage so agust,

Abased, I will cover my head with dust,

And quickly retire from the sight of one

Whom time, nor season, nor storm, nor sun,

Nor the gentle dew, nor the grinding heel

Has ever subdued or made to feel!"

And soon in the earth she sunk away

From the comfortless spot where the Pebble lay.

But it was not long ere the soil was broke

By the peeping head of an infant oak!

And, as it rose and its branches spread,

The Pebble looked up, and wondering said,

"A modest acorn! never to tell

What was enclosed in its simple shell;

That the pride of the forest was folded up

In the narrow space of its little cup!

And meekly to sink in the darksome earth

Which prove that nothing could hide her worth!

And oh! how many will tread on me,

To come and admire the beautiful tree,

Whose head is towering towards the sky,

Above such a worthless thing as I!

Useless and vain, a cumberer here,

I have been idling from year to year.

But never, from this, shall a vaunting word

From the humbled pebble again be heard,

Till something about me, or within,

Shall show the purpose for which I've been!"

The pebble its vow could not forget,

And it lies there wrapped in silence yet.

MISS HANNAH F. GOULD.

THE INCITER.

EDITED BY A. GILBERT, LANCASTER, PA.

TERMS OF PUBLICATION, ONE DOLLAR PER ANNUM, PAYABLE IN ADVANCE.

Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA IN SOCIETY.—*Rising Generation.*

VOL. I.

JANUARY, 1834.

No. 7

EDITORIAL.

To Patrons.

The calender year begins with the present month. It was intended that the publication year of the Inciter should begin with April. We were disappointed and did not issue the first number till June. For reasons not interesting to subscribers, we purpose completing a volume, that is, twelve numbers, before the ensuing April. This will require us to send three numbers in March, viz. the March, April and May numbers.

I frequently change my residence. If I continue to be connected with the publication of the Inciter, when I change it as teacher, I must change it as editor also. This is all the reason now to be offered for doing as above proposed. It will be recollected that April is moving time in Pennsylvania.

Our readers have been informed that I had long desired to publish such a work as we have now on hand. Want of pecuniary means was the sole cause why the publication was deferred. Had it devolved upon me alone, it could not yet have been published.

I have been willing—more than willing, to give my time and service to conduct the work thus far, and I trust I shall continue to feel the same interest I have done, and give evidences of it in the same way—by working gratuitously; but a paper-maker has not yet been found who has offered to supply paper without charge, and though the printer is willing to work for his boarding while he turns off one volume, he does not promise that he will evince such disinterestedness in future;—he thinks

it not unreasonable that his labor should clothe, as well as feed him.

Readers can form a judgement by this time whether the Inciter promises usefulness. If they think it does not, they will of course feel indifferent whether it is continued or not. If they think it has adaptation to the end in view, they will prefer seeing what another volume will bring forth. The little work was commenced without a subscriber; its present subscription list is larger than could have been expected with as little exertion and influence as have been in requisition; but it is not yet large enough to warrant an engagement for another year.

We are not business people and cannot solicit patronage. A number of those who receive it have let me know they think well of it; if those who approve the work will bestir themselves a little and obtain subscribers sufficient to sustain the publication, it will be continued. I hereby request those who wish to see it go on, to let me know by the middle of February, what patronage will be afforded in their respective vicinities. I should be pleased to receive a letter about the time proposed, from every one who receives the paper. It would be social—it would be reciprocity. They have all seen how I write; I should then see how they write. It would be a feast of letter reading; I should expect to hear some reproofs, (which shall be endured with due humility,) blunders, puerilities, &c. &c. may be adverted to, calculated to bring a suffusion over the face; do not be deterred by feelings of delicacy; at fifty the blood does not make long aberrations from its wonted channels. Very seriously, I should look out after

many useful suggestions for improvement. Finally, the continuance of the Inciter depends upon increased support. Be good enough to let us know sooner than the time proposed, if convenient. It will cost each of you but a small amount of postage.

Farming and Gardening.

OR

AGRICULTURE AND HORTICULTURE.

Every body knows that the ground is prepared and the seeds put into it, before a crop is expected in the field or the garden; but some have not observed the conditions that are necessary for the production of the crop.

In the first place the ground is ploughed or dug partly, that the vegetation which is in it may be destroyed; and partly to make it mellow for the reception of the seeds to be planted in it. They are mostly put some distance below the surface.

Again, no seed will germinate, (sprout,) without a proper degree of warmth and moisture. If a seed were put in a dry and cold situation, it would never swell and form that sweet substance which is developed in all seeds before they send out their first shoot; and which appears to be the food of the tender plant until it rises above the surface of the ground.

Soak some grains of wheat, rye or barley in water for an hour; put them in a cloth in a warm place;—in a day or two they swell and feel soft; if you chew one of them it will taste sweet; this is called the saccharine matter of the seed.

When the saccharine matter is developed, a seed shoots down a root and a germ sprouts up.

As warmth and moisture are indispensable to germination, and also for the after growth of the vegetable, the greatest part of planting is done in the spring, about the beginning of warm weather. The seeds would sprout equally well if put in the ground later, but the warm season would not then be long enough to bring the plants to maturity. In our climate, in the months of March and April, barley, oats, indian corn and the greater part of

garden seeds are put into the ground. Buckwheat and turnip seed are sown in July and August. Wheat and rye from Septembr to December, according to the quality of the soil and the experience of the farmer. The two last are able to sustain the severity of winter weather, especially if they are mostly covered with snow; having such a start in the spring, they are ripened by the beginning of July.

Neither wheat nor rye is indigenous to our country, and experience has shown that Autumn is the most favorable season for putting them in the ground. Barley is of quick growth, for though sown several months after wheat, it is ripe first. Oats ripens a month later. If buckwheat and corn are not matured before the first heavy frosts they are injured; the same is true of potatoes and many garden vegetables.

Grains and seeds are best kept when they are dry and cool. Roots, such as potatoes, turnips, beets, parsnips, etc. are mostly kept in cellars or pits in the ground. In these situations they remain fresh and well tasted longer than they would do if kept dry.

The art of farming consists mainly in properly preparing the soil; selecting the seeds best adapted to it; putting it in at the right time; and preventing other vegetation from appropriating the nutriment which is necessary for the growth of that which is planted. Add to this, care to keep the ground well manured.

Specific Gravity.

The tendency which all matter has to a common centre is called gravitation; every portion of matter gravitates, or has gravity, which is another name for weight. All gravity is relative; that is, it is the result of a comparison with other bodies, something is taken as the standard, and other things are compared with it. This is called their specific gravity.

Distilled water is the same every where. On this account it has been taken as the universal standard. A cubic foot, or 1728

cubic inches of water, weigh 1000 ounces avoirdupois; hence 1000 has been assumed for the that quantity. If a cubic foot of any substance weighs more than 1000 ounces its specific gravity is said to be greater than that of water; if less, then it is less.

You have lately seen what is the specific gravities of some of the metals, I will here give that of a few other substances which have been tested. You are not to expect precision for you must be aware that stone, brick, wood and other substances will vary in weight in proportion to their compactness, dryness etc, but the following is not far from truth.

Marble	2700
Common stone	2520
Loam	2160
Brick	2000
Sand	1520
Pitch	1150
Dry box wood	1030
Sea water	1030
Dry oak	925
Gun powder	922
Alcohol	800
Dry oak	800
do Maple	755
Cork	240
Air	1 $\frac{1}{4}$

The ordinary specific gravity of human blood is about 1050, though it varies from 1020 to 1120. Disease alway diminishes its weight, of consequence sound health and full habit increase it. The venous, is heavier than the arterial blood.

The specific gravity of many bodies may be ascertained pretty nearly without a hydrostatic balance. Substances which will remain at rest in any part of a vessel of water, are of the same specific gravity; those which sink in it are heavier, and those which float on it are lighter. If only half of a body sinks in water its specific gravity must be nearly 500. If it requires half the force to prevent a body from sinking in water, which would be required to support it when out of the water, its specific gravity must be 2000.

Arithmetic.

By turning to pages 10 and 11, it will be seen that Reduction changes the names of things without affecting their value. We will try to make it more plain by another example. How many cents and half cents are there in 3 dollars and 75 cents.

Now there is no difference in the value
 3.75 of \$3.75, 375 cents, and 750
 100 half cents.

— The work is performed by multiplying the 3 dollars by 100;
 375 cts. this brings them to cents; there
 2 being a hundred cents in one

— 750 half cts. dollar, in 3 dollars there must be three times as much, that is three hundred cents, to which are added the 75 cents making 375 cents. As every cent contains, or is worth two half cents, the 375 must be multiplied by 2, and this shows that there are 750, or twice as many half, as whole cents, in 375 cents.

If we wish to know how many cents and dollars are in 750 half cents, we must first divide by 2, as there are just half as many whole cents as there are halves. Cents divided by 100 must produce dollars, for as a hundred cents make a dollar, every time we take a hundred out of any number of cents, we take one dollar, and division is taking the number expressed by the divisor out of the dividend, or number to be divided.

Scholars have several times asked me a sensible question about Reduction; it was this. "If it does not change the value of any thing, of what use is it?"

If we wished to know what 29 $\frac{3}{4}$ lbs, yards or bushels would come to at 29 $\frac{3}{4}$ cents each, beginners could not do without reduction; they could not know how to multiply 29 $\frac{3}{4}$ by itself; but let them reduce the two numbers; let them multiply both by 4, and in both cases add in the 3 of the fraction; they will then be in quarters or fourth parts, that is, they will each be 119 quarters, and this can be multiplied by itself by any one who can do simple multiplication. The result will be 14161.

As both numbers were multiplied by 4,

this product or result must be divided by 4 twice, which will quote \$85 and a small remainder. These are the cents that 29½ individuals would come to at the given price.

The Rule of Three, which ought always to have been called Proportion, is based on the fact that a quantity of any thing, of which the price is given, bears the same proportion to a greater or lesser quantity of the same thing, that the price of the first, bears to the price of the second; for example, 1 lb of butter bears the same proportion to 10 lbs of butter, that 10 cents bear to 100 cents; the 1 lb can be taken out of the 10 lb as often as the ten cts. can be taken out of 100 cents.

It should be observed that the word proportion does not apply but among things of like kind—things between which a comparison can be made. Though we can say there is a proportion between a grain of wheat and a wagon load of grains, and though we can say with propriety that there is a proportion between the largest and smallest sums of money that can be named, yet there can be no proportion between any quantity of wheat and its price, be that price high or low. There is a *relation* between the wheat and its price, but no *proportion*; they cannot be compared together, and proportion is based on comparison.

I would add more respecting proportion, but that I trust a more simple mode of ascertaining the amount of purchases and sales, will soon be introduced into schools generally; if so, it is not worth while to take up your time in explaining and demonstrating that which will ere long be superseded by something better. So long however as Proportion is taught systematically, it would be well to adhere literally to the method given by Pike. So long as men prefer rules to reasonings, those are best which call for the most analysis.

Grammar.

JANE.—Well, Charles, have you committed the table of pronouns to memory?

CHARLES.—Yes indeed.

J. What is *him*?

C. A pronoun of the third person singular number, masculine gender, and objective case.

J. It is so in the table; can you give a reason for each of these assertions?

C. Him is a pronoun because it is used instead of some person's name; it is third person, because it is the person spoken of; it is singular number because it implies but one; it is masculine gender because it belongs to males, and it is objective case because it is the form of the pronoun when it is the name of the object. All this except the last, may be said of *he*; it is the form the pronoun takes when it is the name of the agent.

J. Very well. Can you decline all the others as readily?

C. Yes. And now, I should like to hear something about adjectives.

J. Some grammarians say that an adjective "expresses some quality or property of a noun." This is true, but it does not express all the "properties" of the adjective. Words of this class not only do what those grammarians ascribe to them, but they are essential to give any and every species of description. They not only tell of properties, qualities and every thing that constitutes a description of appearances, but localities and actions are also pointed out by them. We will make an example. A man is *strong*; that is a property; he is *kind*; that is a quality; he is *young*, *tall*, *masculine*, *well-proportioned*, *fair-skinned* and *handsome*; these are descriptive of his appearance; he is *absent* or *present*; here his locality is described, and if he is in the act of eating food, or drinking water, he is an *eating*, or a *drinking* man.

C. One would think that as the name of every thing is a noun, almost all the words in the language would be nouns, but I perceive there must be a great number of adjectives, and I suspect I shall be able to tell pretty nearly after this, which they are.

I understand there is considerable difference about verbs among grammar teachers, which do you think is nearest right?

J. Don't perplex yourself with their disputes, nor trust to my judgement. At present, I would advise you to think of verbs as words that are the names of actions; as done in the past time—doing now—or to be done in future. Wherever you find action expressed, call it a verb, and simply observe whether it is past, present or future. If you incline to examine divisions of the past and future time; and some other niceties about verbs, when you are older, it may amuse you, now you may employ your time to better account, I think.

C. I can easily tell the words which denote action, and if there is not much about person, mood and tense, I can get along with them pretty well.

J. I think what is said in the fifth number of the INCITER on person, mood and tense, may serve your purpose at present.

C. What have you to say about the prepositions?

J. I will give you a list of them with short definitions annexed.

IN, INTO, WITHIN, all convey the idea of enclosure; surrounded with something; enveloped.

ABOVE, OVER, signify that there is something between the object and the centre of gravity.

ON, UPON, are the same, with the additional idea, that the object is in immediate contact with this impeding something.

BELOW, BENEATH, UNDER, UNDERNEATH, have relation to something further from the centre of gravity than the thing thought or spoken of.

BEFORE, in front of something else.

BEHIND, AFTER, in the rear.

BY, AT, indicate nearness of position.

ABOVE, AROUND, enclosing, encircling.

AMIDST, AMONG, blended with.

DOWN, nearer the centre of gravity.

UP, farther from it.

BESIDE, by the side.

BEYOND, on the other side of.

BETWEEN, has relation to one object on either side.

DURING, in all the time.

THROUGH, the entire distance or time.

THROUGHOUT, occupying alternately in time or space.

FOR, on account of the force or power.

OF, OFF, separated.

TO, TOWARDS, approaching.

FROM, receding.

TILL, UNTIL, the time to elapse.

WITH, in conjunction.

WITHOUT, disjunction.

EXCEPT, leave out.

This is the ordinary list of prepositions. They all refer, or point to some noun or pronoun, and if it be the latter it must have the objective form in the same way as if a verb referred to it. They mostly relate to the position of the thing spoken of, and hence are describing words; inasmuch as description is incomplete without the position of the thing described.

Zoology.

The animals hitherto spoken of, afford sustenance to man; the one which we are now to think of, is not of this kind; his flesh is not eaten by civilized man any where.

The dog is a carnivorous, or flesh eating animal, and hence he is fitted by nature for destroying his prey. His teeth are different from those of the animals which have been described, and he has claws. With his tusks or canine teeth, and his claws, he defends himself against his enemies, besides using them to catch and kill his prey.

This species of animals seems to have found a home almost every where. There is no climate from the perpetual snows of Kamschatka, to the country of the sun-burnt Hottentot, where dogs may not be found. It is not to be supposed, however, that the creature is alike in all this variety of situation. In size, he differs from that of the great Mastiff, to that of the tiny lap dog. In covering, he varies from almost a naked skin, to the ample coat of the Newfoundland dog. In all his qualities he is as diverse as in his external appearance.

A few instances of this diversity may suffice to give a general idea of the crea-

ture. The Bull dog is fearless, but inactive; the Grey hound fleet; the Hound quick-scented and cowardly; the Spaniel sagacious and tractable. These qualities variously blended to suit the different wants and tastes, have made this animal in some of his varieties, a favorite with men everywhere.

It would be impossible to account for the great number of dogs that are kept in civilized countries, on any rational principles. It is found that what will support a dog of ordinary size, will support an animal whose flesh is wholesome food. The utility of the dog is doubtful; good fences, locks and bolts, furnish all and more than all the protection which he affords to property. The wounds he inflicts on domestic animals cause unnecessary pain to them, and loss to their owners; and with all his sagacity, a dog cannot distinguish between the man who has proper business, and him who has none, on the premises he is to guard.

Besides the very great cost of supporting so many dogs, which, admitting some of them to be serviceable, is far from being repaid, they are quite annoying, especially in towns. Travellers on horseback and in carriages are frequently assailed by them, never without danger, and often with loss. They are more subject than any other animal, to hydrophobia or madness, and most mischievous and alarming when under the influence of that terrible disease.

The dog surpasses other animals in some qualities which render him interesting to man; his acute sense of smell, and his fleetness, enable him to subserve the purposes of a being who acts upon the principle that every thing was made for himself; his affection and gratitude are not unacceptable to a being who is not conscious of meriting as much of these tender feelings as he receives from the faithful creature.

Naturalists agree that all varieties of the dog come from the same original, the Shepherd's dog. This animal is of the middling size, nose rather long, and ears erect.]

Dogs are considered old at ten; I have seen one that had lived twenty-five years.

Alkalies.

POTASH, is made from ashes. Water is poured on the ashes; after it has remained there some time a brown liquid is drawn off called ley. If the ley be boiled until all the water is evaporated, a grey powder remains at the bottom. This is potash. If this be subjected to a high heat, the coloring matter will be burnt up, and it will be white;—this is Pearl ash.

SODA, is prepared from the ashes of sea-weeds, and does not differ materially from Potash, in its appearance or its properties, with this exception, that with oils, potash forms a soft compound, Soda a hard one, (soft and hard soap.)

These alkalies are distinguished by a peculiar taste; by their attraction for oils, and for their destructive action on animal fibre, and other substances. It is owing to their attraction for oil, that they are so serviceable in cleansing; they take up the oily and other animal matters, which cause the dirt to adhere to clothing. They would be too severe on the hands of the washerwoman, if their corrosiveness or causticity were not diminished; hence they are combined with as much oil as is necessary to make them into soap, which does not injure the skin.

The alkalies form an extensive class of bodies that it would be out of place to speak of now.

AMMONIA, or Hartshorn though ranked with the alkalies is not used for the same purposes. It is white like them, and possesses alkaline properties, but it differs from them in having an exceedingly pungent smell, and in being procured from animal instead of vegetable substances. Ammonia is obtained from flesh, bones, horns and hair, by dry distillation. In its combinations it is of great use in the arts and in medicine.

Meteors.

It is probable there are no readers of our paper who have not seen or heard of

the moving lights which were observed in the sky on the morning of November 13th.

As we get papers in exchange from remote parts of the U. States, we have some chance of knowing the different observations which were made, and the different conclusions of those who made them.

This splendid exhibition of aerial fireworks has been noticed hundreds of miles in every direction from this place, and there seems to be a general agreement that the lights moved in all directions from a common centre. Some tell us that the luminous display commenced at midnight, and all say it lasted till daylight. No difference is reported between the individuals of the phenomenon, and ordinary falling, or shooting stars as they are called, nothing to render the scene striking or wonderful, except number.

Various causes are assigned for the appearance; some supposing it to be caused by meteoric stones, thrown far into space from volcanoes; others, the burning fragments of broken planets. Some attribute it to gasses which passed into the upper regions from the decomposition of substances on the earth. Some think it was electricity, while others suppose it was owing to the burning of gelatinous substances, which found their way up there, some how.

I am inclined to believe you will have to get along without any certainty on the subject. Men do not yet know enough to account for every thing. It is doubtful whether philosophers know more about the late phenomenon, than you do. They do know indeed, that there are inflammable gasses generated from the decomposition of bodies; they do know that the electric spark will ignite those gasses; but it might puzzle them to tell why they were generated in such quantity at that time, or, (if the upper regions are always charged with them) why we do not always see them. It would be difficult too to tell how heavy bodies find a region that is not influenced by attraction.

I do not wish to discourage enquiry and

investigation, on any subject, but think it as useful to be sensible of our ignorance, as of our knowledge.

Optics.

All persons who have the use of their eyes, have an idea of light. What it is in them which produces that idea, is not a settled question among those who have bestowed much thought on the subject. Some of them think light is matter; others that it is a property of matter, or that it indicates a particular state of matter.

Let us not puzzle ourselves to find out what light is, but rather spend our time in observing what it *does*. In doing this, we may use the words of those who think it is a substance.

All luminous bodies such as the sun or a candle, send off particles of light continually, in all directions, from all parts of their surfaces; the motion of one of these particles, (which is always a straight line,) is called a ray of light. These rays can cross each other in all directions without any perceptible interruption. Light two or more candles and set them in a row; prick a hole with a pin through a piece of paper; look through the hole and you will see all the candles. This proves that the rays of light from the candles, cross each other without interruption.

It is found that light travels at the rate of two hundred thousand miles in a second.

Some bodies absorb or take in the rays of light which fall upon them; others throw them back or reflect them. It is this reflected light which gives us the idea of their forms and colors. Those bodies which reflect the greatest part of the light which falls upon them, are seen more distinctly by us than those are which absorb the greatest part; example, we could see a looking glass in a room so dimly lighted that we could not see a black board, suspended by the side of it.

If a ray of light fall perpenicularly on a substance, if it is not absorbed, it is thrown back precisely in the direction it came. If it falls obliquely on the surface, it is thrown off obliquely. To give you an idea of this

and before a wall and throw a ball in a direction perpendicular to the wall; it will return directly towards you. Now throw it obliquely; it will glance from the wall at the same angle it was thrown against it, but in the opposite direction. The line which it makes in its approach to the wall, forms with the wall what is called the angle of incidence. That which it makes on leaving the wall is the angle of reflection.

If you hold a candle directly between you and a looking-glass, you will see the image of the candle in the glass straight before you.* Move to one side; you will not see the image, though it may be seen by a person on the other side.

Rays of light, whether they come direct from luminous bodies, or are reflected, continue in the same straight line while they continue in the same medium in which the particles were first omitted. This is proven by the fact that light cannot be seen through a bent tube.

There are no known substances which either absorb or reflect all the rays that fall on them. Black color reflects some, or black bodies could not be seen. Mercury, which is the best reflector, absorbs some (estimated at about one fourth) or it would appear luminous. The more obliquely rays fall on a surface, the more are reflected.

*This is true only of plain looking-glasses. If they are either concave or convex, the rays do not come directly back, because, except the middle ray, none of them fall perpendicularly on the glass. In a convex mirror, the rays diverge from the surface of the glass; in concave mirrors, they converge to a point in front of the glass. In concave mirrors, objects appear larger than their natural size; in convex ones, the image is less than the object.

Geology.

That the earth exhibits different appearances now, from those which it must have presented in some other age of its existence is absolutely certain. The struc-

ture of rocks in many parts of the world is proof positive. Sea shells and other marine productions are found as the constituents of stone of the hardest formed texture. Whether these changes have resulted from violent commotions, or from the slow and silent operations of nature; whether caused by fire or water, or some other agent, are the unsettled questions, and as to any certainty about the matter must forever remain so.

On the tops of some of the highest mountains in the world sea shells are found in such plenty, that there is very little admixture of any thing else for considerable extent. They are to be found in all states, from a perfect unchanged shell, to every consistency of rock, slate and silex, only retaining their forms.

Some geologists argue that their existence in those places is indubitable proof that such districts were once covered by the sea, and that the retiring of the water left them in the exposed situations in which they are now found. Others urge in opposition to this theory, that the shells are of a character of those found only in seas remote from their location. There is indeed much reasoning about it, but no knowledge.

It is not merely shells which are found in unexpected situations, and in a changed condition, but vegetable and animal remains are distinctly impressed in the substance of large solid rocks. Toads and other animals have evidently been changed into stone. All their forms and appearances are as distinguishable as when they were alive; the life is gone and the place of the pliable muscles is supplied with stones of the hardest texture. Leaves, and in some instances fruit, as to the form, are found in a perfect state of preservation; the most delicate organs and serrations of leaves are distinctly perceptible. Entire plants and even large trees are wholly changed into stone.

Where shells, animals and vegetables are changed into stone, they are called petrifications. It is not known how these bodies are formed; some suppose their sub-

stance is changed from what it originally was, and others think that as the materials of the animal or vegetable decomposed, their places were taken up by the earthy and stony particles held in solution by water. The latter is the most common opinion.

Geologists are by some divided into Volcanists and Neptunists. The first account for the marine mountains, by supposing there have been mighty subterranean fires which threw the bed of the sea up to these heights; the latter conceive that the pent up sea broke the barriers which confined it, found its way to the lowest parts of the earth, and left those prominences exposed. Both have plausible reasons to offer in favor of their theories, though neither has any positive proof. You are here told of these things that you may perceive how little is known when those differ, who have devoted themselves to the pursuit of Geology. The facts are known.

Nutmegs.

Nutmegs are the kernels of a fruit which is produced in Banda and other East India islands.

The Nutmeg tree is of middling size not unlike the cherry; its leaves are a bright green on the upper surface, and whitish beneath.

The outer covering of the fruit is a husk, which is of no use; underneath it is a kind of scarlet net-work; this is Mace; next to the mace is a black shell which encloses the nutmeg.

On plucking the fruit, the outer husk being stripped off, the mace is carefully removed and preserved. The nut is then dried, and afterwards kept for some time over a slow fire until the nutmeg shrinks so as to rattle in the shell when shaken. In this state the shells are easily broken. They are then soaked in sea water and lime by which the vegetating principle is destroyed, when they are ready to be put in bags for exportation.

Mace when taken from the shell, is first exposed to the sun, then maintained with sea water and lastly packed in bales.

The English East India Company sold nutmegs in 1804 to the amount of \$220,000.

Cinnamon.

Cinnamon is the inner bark of a tree which is chiefly found in the island of Ceylon. This tree grows to the height of twenty or thirty feet. Its leaves are from four to six inches long, the flowers of a pale yellow color, and the fruit is shaped somewhat like an acorn.

The barking is done in April and November, though in the latter, the crop is not very considerable. The branches of three years old are cut off, and the outside covering scraped away. After splitting the wood, the bark is removed from the parts with great care. It coils up in the drying, and before it is packed up the smaller coils are thrust into the larger ones. It is examined by tasting, for the purpose of assorting it. This is a very disagreeable office; the action of the cinnamon is so great on the organs of taste, that no one is able to continue it more than two or three days in succession.

The nicest specimens of the article are obtained from sprouts which shoot out of the roots, and are cut when they are about the size of a walking stick.

In 1782 some cinnamon trees were taken to Jamaica and have been cultivated in different parts of that island.

The tree is so common in Ceylon, that the wood is said to be used for fuel and other purposes.

Allspice.

Pimento, called allspice because it seems to unite in its flavor that of several spices, is the dried berry of a species of myrtle tree which is indigenous to the West Indies, and which is very beautiful, bearing an abundance of white flowers in bunches. To these the berries succeed, when they are simply gathered and dried.

COMMUNICATIONS.

The Seasons.

I have heard a saying, "when it rains it showers." I was reminded of it the other

day, for just as the seasons below, were put into the hands of the printer, a distant correspondent favored us with an article on the same subject. Some persons tell us that the man who thinks of a thing first is the inventor. I am of the opinion that any number of persons, who may each think of the same thing, even if they think it subsequently are as much inventors as the first. It has often happened, I believe, that two or more persons having no knowledge of each other have thought of the same thing.

Spring.

The flowers of the fields are giving forth their fragrant odors. The gay butterflies are sporting about upon them. The trees are loaded with blossoms and green leaves. The farmer cultivates the ground; the grass begins to sprout and the young lambs sport on it. The cool winds refresh us when we are very warm and the birds begin their warbling. The sweetest pleasures known to man seem to belong to Spring.

Summer.

All the young sprouts have become full grown plants. The workmen take their scythes and mow them off. The wheat field is a beautiful sight. The cradler takes off the grain with his cradle, the raker rakes it on heaps, the binder binds it, or ties it up into sheaves; next it is put up on shocks, and lastly is taken to the barn, to be threshed when it is wanted.

The blossoms are turning to fruit; the cherries are ripe and the grapes are purple. The birds, the bees, and even the little ants are employed.

Autumn.

Autumn has come. The sharp frost has destroyed all the beautiful flowers; the green leaves are turning pale and will soon fall from the branches. The chesnut burr opens and discloses the ripe brown nuts, which are blown down by the wind. The apples fall from the trees and are put under the ground that they may be preserved.

Some birds gather in flocks and fly to a warmer country. The blackbirds get together in flocks of five or six hundred.

Those birds which pass from one country to another are called birds of passage.

Winter.

The fields are covered with snow, and the water with ice. The leaves have fallen from the trees, and there are no beautiful flowers nor green meadows. There are no such beautiful sights as we had in spring or summer. The frost has destroyed them all. The cold winds blow and drift the snow in large heaps. The wheat which the farmer planted is not dead, the snow keeps it from freezing.

The bees and ants are not dead, you will see them again next summer.

F.

Change.

Along the garden beds where late

The queen of flowers shone brightly
And the blackbird sweetly sang to his mate
And the south-wind whispered lightly;
No flower is there, for the hand of death
Has chillingly swept o'er them;
No flower is there for the frost's keen breath
Has withered the stalks which bore them.

Where the rose and the lily lately stood,
As the perfumed air was blowing,
And the violet hung in the sheltered wood
O'er the rivulet smoothly flowing;
The earth is spread with the faded wreaths
Which autumn's breath has blighted,
Which fluttered in summer upon the trees,
As the wood-dove slowly alighted.

R. N. S.

The Lama.

The Lama comes from Peru, in South America. It has a small head, very much like that of a sheep. When it is enraged it spits a liquid, which when it falls upon the skin, is said to leave a red spot and causes itching. The neck of the lama is very long like that of a camel; the body looks like a sheep; the wool is thick on its back, and it carries a burthen like a camel. It does not drink at all and eats very little.

It is about three and a half feet long from the end of the nose to the insertion of the tail, is of a brown color and has divided hoofs like those of a sheep. It is a well-proportioned and pretty animal. A.

Botany.

OF THE DIFFERENT ORGANS OF PLANTS.

All vegetable organs may be considered under two classes; the first includes such organs as promote the growth of the plant. The second, such as tend to perpetuate the species.

The organs which promote the growth of the plant are the root, the leaves and appendages.

The organs of reproduction are the calyx corolla, stamens, pistil, pericarp, seeds and receptacle.

Most of these organs have already been mentioned, and partially described, yet a more minute description of each, you will not, I think, find devoid of interest. The root is that part of the plant which extends in a direction contrary to the stalk. It is mostly fixed in the earth; supports the plant in an upright position and imparts to it the nourishment which it derives from the earth. Some plants instead of being fixed in the ground, grow in the water, these are called aquatic (from aqua, water,) these float about, not being fixed to any place, and are nourished by fibres suspended in the water. Some grow by fixing their roots into the bark of trees and plants; such are called parasites. Of this kind is the mistletoe of which you have often heard, though probably you have never seen it, the only parasitic plants in our climate are those of the cryptogamous class, such as lichens, mosses, &c. There is yet another kind of plants that grow without any root, these are called air plants, as they appear to live entirely upon air. Of this kind is a plant called the vegetable camel, which is said to flourish in the most dry and sandy places, exposed to a burning sun. Another called the epidendrum it is likewise stated grows and blossoms for years, suspended from the ceiling of a room. The roots

which grow in the ground are composed of two parts, the caudix, or main root, and the little threads or fibres which grow out in all directions from it, called radicles. These radicles have been found by experiments to perform a very active part in absorbing those juices from the earth which tend to the nourishment of the plant.

Roots, with respect to their duration, are either annual, biennial or perennial. The annuals are those that grow up every year from the seed; the biennial live two years; they do not produce any fruit or seed the first summer; the next they sprout up, blossom, mature their seed and then die.

The forms of the roots are so numerous that it would be impossible to give names to them all; the principal varieties, may, however, be classed under seven heads.

1st, branching roots; these are the most common; they consist of numerous branches which shoot out in all directions, some descending a great depth into the earth, while others run along almost horizontal with it. It has been found by experiment, that these roots when exposed to the air will throw out branches and leaves, and that limbs buried in the earth will in time become roots.

2nd, Fibrous; these consist of a number of thread-like parts which grow immediately from the stem, as in the grasses.

3rd, spindle; this is large at top and tapering downwards as in the beet and carrot and most of the biennial plants.

4th, Creeping; this root, instead of forcing its way through the earth, extends horizontally, near the surface it is composed of joints, like the stalks of corn, and is so tenacious of life that a piece cut from the root, containing one of these joints will grow.

5th, Granulated; this consists of bulbs strung together by a thread like a radicle.

6th, Tuberous; this kind of root is hard, solid, and fleshy; it consists of knots or knobs fastened together by means of strings or filaments; the potato which is an ex-

ample of this kind, is in reality but an ex-
crescence, proceeding from the real root.

7th, Bulbous roots; this is a fleshy root
of bulbous form. Bulbs are solid as in the
turnip, scaly as in the lily, or coated as in
the onion.

I must leave a further description of
these organs for the present; should you
feel interested in its continuance, you will
probably hear something further at another
time.

SELECTIONS.

William Penn and Thomas Story travel-
ling once in a southern state, were over-
taken by a shower of rain, and went into a
tobaccohouse for shelter. The owner, who
was little accustomed to be with persons
who did not acknowledge his superiority
was offended at their dignified ease in his
august presence. He addressed them
with "I suspect you do not know who I
am; I am a justice of the peace." Not at
all disconcerted by this information, Story
calmly said "My friend, here, makes such
things, he is the Governor of Pennsylva-
nia.

—
A witty jockey speaking of his horse,
said he had but two faults. On being
asked what they were, he replied "He is
hard to catch, and—good for nothing after
he is caught.

—
A good Omen.

Are our readers generally apprized of
the fact that the present executive of the
state, is the uniform advocate of **UNIVERSAL
EDUCATION**?

Views were pointed out to me in Wolf's
first Message, more radical than I ever
saw before, in any state document. My
interest was excited by the sentiments al-
luded to, nor have I been slow to observe
whether what he then said was from the
spur of the occasion—the impulse of the
moment. No message of his at the com-
mencement of a session, has been silent on

this subject. This is not all. Wolf, though
not the first Governor who has devoted a
paragraph to the subject, is the first that
I know of, who has demanded a system
of general education, for the benefit of the
rich, as well as the poor, and by doing so
has raised a hand, which I trust will one
day fall with death-dealing weight on the
odious and degrading pauper system. No
public functionary before Wolf, has had
the discernment to see, or the independ-
ence to expose, the absurdity of giving a
RIGHT in the character of a CHARITY. No
one but Wolf has taken the ground that a
state OWES instruction to ALL its young
citizens; it seems to have been reserved
for him to suggest that it is equally im-
portant in a Republic, that the son of a
Labourer should be well trained, as the
son of a President—the law holding them
equally amenable—the community having
equal claims on their services. A few
more such Governors as Wolf, (the re-
marks are limited to the one question,)
and a few legislatures willing to discuss
his recommendations on this interesting
subject, and it will be fairly before the
People of Pennsylvania; they will reflect
upon it and be prepared to appreciate, to
adopt, and to profit by what their Repre-
sentatives properly qualified, may devise;
and perchance at no distant day, be as
much in advance of some sister states in
this momentous matter, as they are now in
their rear.

A rich return of gratitude may be ex-
pected from the rising generation, for the
noble position assumed by our present
chief magistrate.

In his recent Message he has gone more
into detail than heretofore. He tells what
has been done and what may be expected
from it. In his anticipations he may be
disappointed. The friends of improved
education will not feel discouraged if it
should prove in the sequel that his calcula-
tions were made on erroneous data; they
are not apprehensive that the resources of
Pennsylvania are inadequate to furnish
means for the scientific and moral training

of her children, when their parents as with one eye shall see their wants, and with one mind resolve to supply them.

When speaking of the penitentiaries, he says,

"It requires no extraordinary stretch of sagacity to trace the cause of their necessity, and to discover a remedy which, if not sovereign, will contribute to a more healthy state of the public virtue and morals; in a suitable attention to an enlightened cultivation of the minds of our youth;—to a more general diffusion of knowledge, and to an enlarged, liberal, and extensive intellectual improvement, capable of elevating the understanding above the degrading influence of the passions; the seductive blandishments of vice, or the deceptive delusions that mask the infamy of crime.

UNIVERSAL EDUCATION, if it were practicable to enforce it every where, would operate as a powerful check upon vice, and would do more to diminish the black catalogue of crime, so generally prevalent, than any other measure whether for prevention or punishment, that has hitherto been devised. In this State it is not only considered as being entirely practicable, but is enjoined by the constitution as a solemn duty, the non-compliance with which has already stamped the stain of inexcusable negligence upon the character of the Commonwealth, which nothing short of prompt and efficient measures in compliance with the constitutional requisition can remove. The Legislature has the authority of the Constitution to act efficiently and without control in this matter, and "to provide by law for the establishment of schools throughout the state, in such manner that the poor may be taught gratis," is one of the public measures to which I feel it my duty now to call your attention, and most solemnly to press upon your consideration. Our apathy and indifference in reference to this subject becomes the more conspicuous, when we reflect, that whilst we are expending millions for the improvement of the physical condition of the State, we have not hitherto appropriated a single dollar that is available, for the intellectual improvement of its youth, which in a moral and political point of view, is of tenfold more consequence, either as respects the moral influence of the State, or its political power and safety. * * *

In ten years the Governor thinks there will be a school fund so ample that its good

effects may be felt throughout the state, but,

In the mean time, however, there are no available means for commencing this much desired measure of State policy, this true system of republican equality that will level all distinction between rich and poor; that will place the child of the most indigent citizen of the Commonwealth upon a level with that of his richer neighbor, both in the school room and upon the Campus; will instruct the rising generation in their duties as citizens; enable them to appreciate the sentiment of acquired freedom; and secure the perpetuation of civil and religious liberty to our country, by teaching them what civil and religious liberty really import and mean. It is to this all-important measure, both as regards our happiness as a people and the security of our invaluable political institutions, to which I would earnestly invite your immediate attention, and upon which I would solicit your prompt action.

It is time, fellow-citizens, that the character of our State should be redeemed from the state of supineness and indifference under which its most important interests, the education of its citizens, have so long been languishing, and that a system should be arranged that would ensure not only an adequate number of schools to be established throughout the State, but would extend its provisions so as to secure the education and instruction of a competent number of active, intelligent teachers, who will not only be prepared, but well qualified, to take upon themselves the government of the schools, and to communicate instruction to the scholars.

The Gold Watch.

I have now in my hand a gold watch, which combines embellishment and utility in happy proportions, and is usually considered a very valuable appendage to the person of a gentleman. Its hands, face, chain and case, are of chased and burnished gold. Its gold seals sparkle with the ruby, the topaz, the sapphire, the emerald. I open it, and find that the works, without which this elegantly chased case would be a mere shell—those hands motionless—and those figures without meaning, are made of brass. I investigate further and ask what is the spring by which all these works are put in motion, made of? I am told that it is made of steel. I ask what is steel?

The reply is that it is iron which has undergone a certain process. So then I find that the main spring, without which the watch would be motionless, and its hands, figures and embellishments but toys, is not of gold, that is not sufficiently good—nor of brass, that would not do—but of iron. Iron is, therefore, the only precious metal; and this gold watch is an apt emblem of society. Its hands and figures, which tell the hour, resemble the master spirits of the age, to whose movements every eye is occasionally turned. Its useless, but sparkling seals, sapphires, rubies, topazes and embellishments, the aristocracy. Its works of brass the middle classes, by the increasing intelligence and power of which the master spirits of the age are moved, and its iron mainspring, shut up in a box, and constantly at work, but never thought of, except when it is disordered broke, or wants winding up, symbolizes the laborious classes, which are ignorantly and snperciliously miscalled the lower classes, which, like the main spring, are wound up by the payment of wages, which classes are shut up in obscurity, and tho' constantly at work and absolutely necessary to the movements of society, as the iron mainspring is to the gold watch, are never thought of, except when they require their wages, or are in some want or disorders of some kind or other.

I wish all our readers would resolve as Thomas did. In the first place, read very little of any thing which you cannot understand clearly; as little of that which you perceive has no application to the purposes of life; and lastly give sufficient attention to that which you do read to make others acquainted with it. If I am not mistaken you will derive benefit from a habit of telling others the substance of what you read. The expectation that you will give a synopsis, will keep attention awake while you are reading. The effort you make when reciting will strengthen the thinking faculties. You will imperceptibly learn arrangement, and acquire a ready use of words.—Ed.

The Gift.

"Here Thomas," said a father to his little son, "here is a nice book for you. I give it to you as a New Year's gift, in hopes that you will take care of it."

"Thank you, father," said the little boy, "it is a beautiful one and the pictures are fine. The stories are short, and I shall have time to read one of them to sister Fanny every evening. I will try to remember what I read, and not forget as soon as I lay the book down as some boys do."

I hope you will not my son. Some boys read more as if they wished to see the last page in the book, than to get any instruction from it. If you read your book in this way, it will do you but little good."

"I will not read it that way father, but as I read I will think, and speak out plain. I expect when I have read it through, to be able to tell you the stories it contains."

A Sketch of the history of America.

This meeting of wise and good men was called the Congress. The first important thing they did was to appoint that most noble of men, George Washington, to be general in chief of all the armies which could be raised to defend this country.

After many battles and great sufferings brought upon these colonies by the British troops, the Congress, at Philadelphia, determined to make a bold stand, in behalf of our country, and to tell all the world what they meant to do.

They chose five of their best scholars to draw up a writing, they said the king of England had done many wrong things towards the Americans; he had reigned over them like a tyrant, and not like a father; and they could no longer bear such treatment.

They said that from that time, each of the thirteen colonies should be a free state; they should all be united to defend their rights; they should form a nation by themselves, and have a government of their own, and make their own laws, and the king of Great Britain should no longer be the king of this country. They appealed

to all nations, and to the God of Heaven and earth for the justice of their cause.

Fifty-six members of Congress signed their names to this paper, and pledged their lives, their fortunes and their sacred honor, to make the proceeding stand good. This writing was called the Declaration of American Independence. It was dated the 4th of July, in the year 1776.

War now raged in a terrible manner, and vast numbers on both sides were slaughtered. The king of Great Britain hired in Germany, 17,000 soldiers called Hessians, to come here and help his men to conquer this country.

Our people defended themselves with singular bravery; and, in the year 1778, Dr. Franklin, a learned American philosopher and statesman, went to Paris, and agreed with Louis XVI, king of France, to send a French fleet and army here, to assist in defending the United States.

At the same time, a very extraordinary young man in France, by the name of La Fayette, hearing of the sufferings of the people here, hired a brig, and came at the risk of his life to save them from ruin. He was made a general in the American army, and passed through many dangers and hardships in our cause. He is now an old man, and remarkably beloved by all good people.

When the fighting had continued nearly eight years, and two large British armies had been killed or taken prisoners, by the Americans, king George concluded to give up the contest, and let the United States be a nation by themselves, as they had determined. This they called the war of the Revolution, because that by this war the government of the country had been changed.

Electricity.

E-lec-tri-ci-ty. "What does this long word mean, papa?" O, it is a very hard word. You cannot understand it. "Does it mean any thing about electing or lecturing papa? Do tell me." No, no. It

comes from a word that means amber. "What is amber?" It is a rosin of bright yellow color. It is found in the earth. "Is electricity made of amber?" No, my child; but did you ever rub a cat's back in the dark? "O, yes; and it sparkled and crackled very much." Well, now, that is electricity. "What; the sparks or the noise?" No, electricity is what makes the sparkles and the noise. "What is it then?" I do not know. Can you tell what it is that makes the smell of a rose? "No, I do not know." Well so it is here. "But why is it called from amber?" Because people found, that when they rubbed amber, it would draw cotton, and light things to it, or attract them; and then they found that other things made of rosin, and also of glass, would do the same. Then they used very large pieces of glass and of sealing wax, and they found they would sparkle and crackle like the cat's back, and so they found the attraction and the sparks and the noise were all produced by one thing, which they called electricity. "But sometimes in the winter, when I have pulled off my woolen stockings, they would crackle and sparkle too. Was that electricity?" Yes; and when your mother pulls off her silk cloak, in cold weather, it is often covered with sparks.

"Can we make electricity then, papa?" We can make it produce some effects. Here; take take this glass phial and rub it on your sleeve. Now touch this piece of cotton with it. "See how it springs up to the glass—but now it drops off. What makes that, papa?" Philosophers tell us that it becomes full of electricity, and then it is driven away or repelled. When it is laid on the table a little while, the glass will draw it again. This they say is because the overcharge of electricity has gone into the table; and so it is attracted again.

But here is an electrical machine. It is a large bottle, turning round, and rubbing against a piece of silk. See what large bright sparks it makes! Put your knuck-

le to; it will make it sting, but it will not burn. Here is a bottle quite filled with it. Touch this. "O, see how it makes my arms jump, papa! What is it?" This is called a shock. A person who took one from a very large bottle, which was quite full of electricity, was killed by it. "But did you ever see any thing like electricity, beside what we have mentioned. Is there ever any thing like it in the sky?" Nothing but the lightning. "How is that like it?" Why there is first a flash, and then the thunder. "But then it is a very bright, large flash, and not a spark; and thunder is a very loud noise." But is not a little spark of fire just the same with the fire in the chimney? "Yes." And so it is with electricity. Dr. Franklin, a great many years ago, sent up a kite when there was a thunder cloud near; and tied the string to a window, and hung a key to it; and then he could draw sparks from the key, with his knuckle, just as well as from the machine.—"Then I think lightning must be the same with electricity, for it makes a light and a noise just like it, and it kills people, too, sometimes. But I do not see it attract any thing." Did you never see two black clouds come together in a storm? That shows attraction. So you see, lightning is just like electricity.

Boyhood.

BY N. P. WILLIS.

There's something in a noble boy,
A brave, free-hearted, careless one,
With his unchecked, unhidden joy,
His dread of books and love of fun,
And in his clear and ready smile,
Unshaded by a thought of guile,
And unrepressed by sadness—
Which brings me to my childhood back,
As if I trod its very track,
And felt its very gladness.

And yet it is not in his play,
When every trace of thought is lost,
And not when you would call him gay,
That his bright presence thrills me most,
His shout may ring upon the hill,
His voice be echoed in the hall,

His merry laugh like music thrill,
And I in sadness hear it all—
For, like the wrinkles on my brow,
I scarcely notice such things now—
But when, amid the earnest game,
He stops, as if he music heard,
And, heedless of his shouted name,
As of the carol of the bird,
Stands gazing on the empty air
As if some dream were passing there—
'Tis then that on his face I look,
His beautiful but thoughtful face,
And like a long forgotten book,
Its sweet, familiar, meaning trace,
Remembering a thousand things
Which passed me on those golden wings
Which time has fettered now—
Things that came o'er me with a thrill,
And left me silent, sad and still,
And threw upon my brow
A holier and gentler cast,
That was too innocent to last.

'Tis strange how thought upon a child
Will, like a presence, sometimes press;
And when his pulse is beating wild,
And life itself is in excess—
When foot and hand, and ear and eye,
Are all with ardor straining high—
How in his heart will spring
A feeling whose mysterious thrall
Is stronger, sweeter far than all;
And on its silent wing,
How with the clouds he'll float away,
As wandering and as lost as they.

The Cherry-Tree.

I planted a cherrystone here,
Expecting it shortly would sprout;
And oft have I look'd, but I fear
The stranger will never come out.

Perhaps like the germ of the mind,
It only takes root with much care;
The soil must be yielding and kind,
Or how can its produce be rare?

I did not consider this truth,
And thus may have spoil'd a fair tree;
But those who instruct me in youth,
A better example must see.

The root they have planted shall grow,
Their efforts I gladly will meet.
At least, for the care they bestow,
The fruit shall be juicy and sweet.

THE INCITER.

EDITED BY A. GILBERT, LANCASTER, PA.

TERMS OF PUBLICATION, ONE DOLLAR PER ANNUM, PAYABLE IN ADVANCE.

Surround us favourably for acquiring knowledge; dispense with unnatural classification remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA IN SOCIETY.—*Rising Generation.*

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FEBRUARY 1834.

No. 9.

EDITORIAL.

To Parents.

It is matter of unfeigned satisfaction to the enlightened friends of mankind to observe that at last, a general impulse seems to pervade the public mind in relation to the diffusion of knowledge every where. In the last number of this periodical is shown the prominent and noble stand taken by the Governor of this state, with which the advocates of improved education will be highly gratified, except his extract from the constitution of the state, which contemplates a provision for the gratuitous education of the poor.

I am so little accustomed to see men in public life take the high ground assumed by Wolf, that I am not disposed to be very punctilious about small matters, or fastidious about phraseology; and besides, he was urging the subject upon the Legislature for constitutional reasons; still it would have been well had he reflected that he was writing forty years after that document was penned, during which time the people had not been altogether inattentive to the injunction, "cease to look back to the things that are behind, and press on to those which are before." There can be no doubt that public opinion has been greatly enlightened since the constitution was written, and therefore we can make no use of that instrument, so far behind the age, on the subject of education, except as a stimulus, which I trust is all the use contemplated by the governor.

That which I had in view in the commencement of this article was to notify our readers that a memorial to the Legislature of this state, calling the attentio

of that body to the establishment of MANU-AL LABOR SCHOOLS, is now in circulation. It is an energetic, and truly republican document, and exhibits in a brief, but lucid manner, the danger incident to a monopoly of intelligence. We have room but for one paragraph, which may serve to show the spirit of the memorial.

"Your Memorialists cannot refrain from expressing their deep conviction, that, inasmuch as knowledge is power, and the possession of it necessary to the safety and happiness of the people, the purity and perpetuity of our free government; the clear perception of the moral sense, the steady practice of moral virtue, and the promotion of the honor and dignity of human nature;—the MEANS of equal and universal education, proceeding from the public resources, as freely and as bountifully as the breath of heaven, should of RIGHT be the certain and indisputable inheritance of every child born in this State.

It is desirable that this memorial should be generally circulated throughout the state, not from an expectation that any thing very efficient can be expected from the present session of the legislature, but that the subject may be brought fairly and fully before the people. It must claim their sober attention—they must *feel* its importance before they will be capable of realizing the incalculable benefits to result from its practical operation. Let those, then, into whose hand the petition may fall, not merely circulate it, let them use every endeavor to arouse others to a consideration of its principles and its objects. The mind of every serious, conscientious philanthropist, well awakened to the subject, and we ask no more; and there are more of this character in the land than

tions, yet he knows them himself, and to be reminded of them, produces unpleasant feelings; he knows that in his own bosom there is not that primary feeling of moral obligation and fraternity" which the paragraph alluded to inculcates. He feels conscious of the want of that "deep, abiding sentiment, that strong affection of the soul, that radiating influence from the heart," which can elevate his thoughts above pecuniary or party interests, and fill his bosom with that generous philanthropy which makes him feel that every man is his brother. This it is, which if cultivated, would cement these states together; without it, what can be expected, but that sooner or later, they will crumble to pieces.

But is the patron primarily in fault? Is it not attributable to the state of the press that he is what he is? Had it been conscientiously conducted with an eye to moral results, would not readers be better pleased with moral truth than with party exaggeration? Does not the press form the taste? Does not the taste thus formed govern the press? Can the consequences of this reciprocal action be avoided, without the consent of both?—Without the co-operation of both?

The Memorial on education referred to in another article, contains the following.

Your Memorialists are aware that great advantages have been expected to accrue to the people, from the free circulation among them of public newspapers; but it will be readily seen, from the character which those papers assume, that the expectation is fallacious. The prints which are usually spread before the people are almost exclusively of a strong party cast, all of which, though characterized with zeal and perseverance, fall infinitely short of furnishing to the mass of the inhabitants that stock of intelligence which should distinguish a free people;—The publications appear rather designed to enlist the passions and confirm the prejudices of the ignorant multitude, than to enlighten and direct their judgements in the proper discharge of the duties of citizens.

Those which are not of a party cast, but professedly devoted to literature, are even more reprehensible than the others.

The moderate character of their fanciful articles, recommended by a pleasing style of writing, create in the reader, imperceptibly to himself, a love of fiction, and consequently a distaste for sober truth. The application which is necessary for the comprehension of moral or scientific truth is rendered painful to those who indulge in light reading. It were well if the literary periodicals of the day had only a negatively injurious tendency. They generate a sickly moral feeling, and its unhealthfulness is concealed by the rouge and whitewash with which it is dressed up. The imagination is cultivated at the expense of the judgement; the passions are excited, and the intimations of the moral sense grow less and less perceptible. These, it must be confessed, are grave charges, in which the collator and reader are implicated; they are novel too, and withal somewhat bold and obtrusive, but if I auger well, the day is not distant when the correction of a misguided effeminate taste, will be the work of hands respectable both in point of talent and number.

Optics.

Though rays of light pass in straight lines it is only while they are in the same medium. When they enter a medium which is either more dense, or more rare, they are bent at the contact of the media. Thrust a walking stick or any straight substance obliquely into a tub of clear water; it will appear to be bent at the surface of the water, the lower or far end of the stick will appear to be higher than a straight direction with that part which is out of the water. Put a quarter of a dollar into a bowl which is standing on the table; walk backwards until you lose sight of the piece of money; stand still while some person pours water into the bowl and as the water rises, the money will come into view. Many examples might be furnished in proof that the rays bend in passing from one medium to another, but we will let these suffice. This bending is called refraction.

Advantage is taken of this refraction, in the construction of several optical instruments, the Prism, the concave and convex Lens.

The prism is a three-sided stick or bar of glass. When objects are viewed through it they have all the colors of the rainbow.

Philosophers speak of the primary colors. They say there are seven original colors, and that if these be blended in the proper proportions, they produce in us the idea of light. They say that these colors, (violet, indigo, blue, green, yellow, orange and red,) are not alike refrangible, that is, that some of them are more refracted or bent, in passing from a denser medium, than others are; they offer in proof of this, the rainbow appearance of colors as seen through the prism. In the spectrum, the red portion is nearest the straight direction in which the rays of light entered the prism, and the violet farthest from it. Assuming as a fact that light is thus composed of seven primitive colors, and knowing that objects are seen by the rays of light passing from them to our eyes, they infer that the reason why bodies appear to have different colors, is, that owing to the peculiar arrangements of their particles, they absorb and reflect the primitive colors differently; some absorbing all but one color—some absorbing but one, and so on. Blackness, they tell us is an absorption of all—whiteness indicates that all are reflected. The intervening shades of color show that the rays are reflected in a state of mixture.

The Lens is a circular plate of glass, and may be either thicker in the middle than at the edge, or the contrary. If thickest in the middle it is a convex lens; if thickest at the edge, it is concave. Two watch chrystals, if their edges be brought together, form a convex lens; reversed, it is concave. Seen through a concave lens, objects appear smaller than they really are; a sun-glass makes them appear larger than their true size. Hence concave glasses assist those who see things larger than their true size, and convex ones, those who see them smaller

than they really are.

One convex lens is a Microscope, and is used for viewing minute objects which can be brought near to the eye. Several of them placed in a tube, at proper distances from each other, make an instrument called a Telescope which causes distant objects to appear near to us.

A Microscope may be made to increase the magnitude of a small object which is near to us ten, or more times. A telescope may be made to diminish the distance of a remote object to one tenth or less.

Parallel rays of light passing through a concave lens spread or diverge from each other. Those which pass through a convex one, converge, or tend to a point called the focus. The burning glass is an example of this; for not only is the heat concentrated in a point, but also all the light which falls on the round surface of the glass next to the sun, is collected in the luminous spot where the combustion is effected.

It is easy to conceive (since rays of light cross each other without interference) that the rays respectively pursuing their straight course, must diverge beyond the focus; and this is the fact. Take a burning glass and view a landscape, houses, trees, &c, with the instrument near the eye; move it slowly from you in the direction of the landscape. There is a point at which you can see nothing distinctly; your eye is then in the focus. Continue to move the glass from you, you will again see the same objects as before, and you will see them distinctly, but they will be inverted; the roofs of buildings and the tops of trees will be turned downward. Get another person to hold another glass at a suitable distance beyond, and they will resume their proper position.

The eye is a convex lens. Some suppose that we see things inverted, and that habit corrects the error.

Convex lenses are wanted not only in spectacles, burning glasses, microscopes and telescopes, but in the construction of Panoramas, Camera obscuras, and Magic Lanterns.

HYDROGEN, is another of the invisibles, and is also very plentiful in nature. It enters into the composition of vegetable and animal substances, and is one of the constituents of water. It does not support combustion, like oxygen, but is, itself a combustible body. It burns with flame, and some philosophers think that flame always indicates its presence; that there is no flame without it.

NITROGEN, is also invisible. It is a constituent of atmospheric air, and of animal substances. The addition of this ingredient causes the striking difference between animal and vegetable bodies. It neither burns, nor supports burning.

CARBON, in its purity is Diamond, but though there is so little resemblance in the two substances, it is also the basis of charcoal. Carbon enters largely into the animal and vegetable kingdoms and their combustion in the absence of flame is attributed to its presence.

SULPHUR, is too well known to need a description, and we are now endeavoring to acquire ideas of the elements themselves, rather than their properties.

PHOSPHORUS, has the appearance of bleached wax, or spermaceti, and is one of the most combustible substances known. To prevent it from burning, it has to be kept in water. If taken up in the dry hand it burns, and at the common temperature, it emits a constant light and heat; this cannot be distinctly seen in day light.

Chocolate.

Is prepared from the seeds of the Cocoa.

This tree bears a fruit resembling a cucumber, of a bluish red color when ripe, with pink or other delicate veins. The fruit contains from twenty to thirty kernels or seeds, shaped like almonds, which consist of a white, sweet pulpy substance, within a thin husk or shell. These seeds are the cocoa or chocolate nuts. The trees yield two crops in a year, one in June and one in December. When the fruit is

ripe, the seeds are taken out and laid out on leaves to dry.

The first process in manufacturing the chocolate, is to roast the seeds over a gentle fire, when the husks separate from the kernel. These are then pounded in a mortar, and afterwards ground on a warm smooth stone. After it is pulverized sufficiently it is made into paste with water, in which state it is pressed into moulds giving it the shape of the chocolate cakes which are used.

The Cocoa tree flourishes in South America, and the West India Islands.

Definitions.

YES, merely gives an affirmation to a question proposed, and is in place of repeating the question with an affirmative, "Will you go with me?" "Yes," that is, I will, or determine to go with you. It is the verb *get*.

NO, is exactly the contrary in meaning, and equally comprehensive. It gives a negative to the whole question asked, without repeating the question; thus, "Will you go with me?" "No;" that is I have no such will or determination.

NOT, NOUGHT, NAUGHT, NOTHING, all mean in some way, absence; that the something or quality spoken or thought of, is not present.

HENCE, from this place.

THENCE, from that place.

WHENCE, from what place.

HITHER, here, in this place.

THITHER, there, in that place.

WHITHER, where, in what place.

Now, the present time.

THEN, at that time; some time spoken of, either past or future.

WHEN, at what time, either past or future.

WHILE, wheeling or passing away, "Stay while I stay," that is, stay till the time of my departure wheels or passes away.

TILL, to while; the time to elapse before a portion of time wheels round.

WHATEVER, what thing or fact.

WHENEVER, what time.

WHEREVER, what place.

AM, ARE, BE, and IS, all signify to exist, to exercise the functions necessary to exist in some particular way. Animals have their functions or powers by which they live or exist such beings as they are. The same is true of vegetables; nor is it less so in the mineral kingdom.

Take from an individual of any of them, any function or property belonging to it, and it ceases to be such existence.

CAN, to con, can, or ken, signifies to comprehend or know. "I can demonstrate this." "I know the way or mode." "I have the skill." It relates to mental skill.

OUGHT, expresses obligation.

MAY, expressive of physical power. A knowing man *can* devise an ingenious plan, an ignorant man *may* execute it.

MUST, to be in bondage, under restraint, to be bound or compelled.

SHALL, to be under constraint or obligation to one.

WILL, inherent tendency. In thinking, it expresses intention, determination. In those which are not known to think, an aptitude or innate disposition, capacity or tendency.

HAVE, nearly the same as have. It signifies control over actions and thoughts; the ability to control or dispose them;—not mere possession.

DO, to employ or exert skill mentally.

The sum of the matter.

Learn to avoid what thou believest sin,
Mind what reproves or justifies within.
No act is good which doth destroy thy
peace,
Or can be bad which makes true joy increase.

The foregoing was put into my hand a few years since by one of the ornaments of her sex. This is the second time it has been published at my instance, and I should be pleased if it would meet the eye of every reader in the land. Though it is not very poetical, nor theological, (though

I believe the writer was a preacher,) still, I cannot avoid thinking that the two first lines contain a wholesome exhortation, and that the two last set forth two undeniable truths, with a force and brevity which cannot be surpassed by the enlightened conceptions or the refined diction of those who came two centuries after the author. The ideas are not essentially different from those contained in a stanza of Pope's Universal prayer.

What conscience dictates to be done,

Or warns me not to do,

This teach me more than hell to shun,

That more than heaven pursue.

By the bye, I like short things; they suit a short memory. We know that where great weight rests on a small base, the pressure is greater than if it were spread over more surface.

A question answered.

We have had time to ask ourselves what we were invited to do in an editorial paragraph which preceded the first selected article in page 46; namely why we do not see more such articles as that which has for its caption, "Moral Influences." I feel ready to answer the question, whether satisfactorily to others, they must themselves decide.

Editors of newspapers risk a loss of patronage if they occupy their columns with such matter; for in the first place, a great portion of their readers are political partizans. and are dissatisfied if the paper be not devoted to the interests of the party to which it is pledged; but secondly, such sentiments, if read at all, and considered, are, in nine cases out of ten, at a reflection on the reader. He *feels* this, and as few torments are less tolerable than self reproach, especially when the suggestions of another give rise to it—simply that he may not subject himself to such annoyance, he will discontinue the paper.

Though the editor of the paper has no personal knowledge of him, or if he has, is unacquainted with the state of his affec-

we suppose, but they are sleeping at their posts;—assist them to shake off the lethargy, and all shall be well.

There are many symptoms of better days, which are quite distinguishable by the attentive observer;—common schools are improving in many places;—parents are beginning to ask themselves, “should not my child be instructed in every thing useful for man to know?” and in despite of popular usage, “why should he spend his time in that which has no real practical utility?” There are several periodicals professedly devoted to the developement of the youthful intellect, and there are some few schools on a very improved plan, which are destined ere long to convince the incredulous that old ways should be superseded by new ones, when the latter are better. One of these is this moment in my memory; the Athenian Academy, at Rahway in Jersey, got up by some public spirited citizens of that vicinity. At that Institution, knowledge is rendered accessible to the beginner, inasmuch as it is taught from things, and through the intervention of apparatus to elucidate principles.

My personal knowledge of one of the teachers, Alvin Fox, makes me sanguine regarding what may be expected from the Athenian Academy at Rahway, with its 115 pupils.

Grammar.

Every grammar book has rules, but they have not the same number, nor are they alike. What is worse than either of these, young people do not understand them well.

I will select from them some of the thoughts in which they agree, and endeavor to make them more simple.

1st. Nouns are mostly agents of a verb, or objects of a verb or preposition.

2nd. Two or more nouns connected by *and* are taken as a collective plural in their relation to other words; when they are connected by *or*, *nor*, *either*, *neither* and *but*, exactly the contrary is the case.

Hence *and*, by taking them collectively, causes them to be plural, so *or*, *nor*, *either* and *but*, by taking them separately causes them to be singular.

3d. Pronouns have the same relation to the other words in the sentence, that the nouns they relieve would have, and must vary their forms to express that relation.

4th. Adjectives describe nouns and must agree with them in number.

5th. A verb of the indicative mood, must agree with, or be suited to its agent in number and person.

6th. When agents of different numbers are connected by *or* and *nor*, the verb must agree with the plural, which should be placed next to it.

7th. Bid, can, do, dare, feel, hear, let, make, may, need, see, shall and will, cause verbs after them to be in the infinitive mood, which is otherwise preceded by the preposition *to*.

8th. Where verbs are connected, they ought to have the same form, where opposed in meaning, repeat the name of the agent.

9th. Words should not be placed between the infinitive mood and the preposition *to* which governs it.

10th. Either, requires *or* to follow it. Neither requires *nor*.

As-so, so-as, imply a comparison of quality.

So-that expresses a consequence.

It is not pretended that any thing new is contained in the foregoing rules, or that they comprise all the rules of grammatical arrangement. If they can be understood they may serve to correct or prevent some of the grosser errors in speaking and writing, and may lay the foundation for a more minute analysis of language. They contain what every one should know. Critics will extend their researches further, and the result of their labors will be specimens of their taste, rather than systematic rules of universal application.

After all there are a few instances of what grammarians call false syntax, which if pointed out would do more to correct

the current phraseology than a multiplication of the best devised rules; take as examples,

<i>Him and thee</i> will go.	<i>Thou and he.</i>
<i>Let thou and I</i> do it.	<i>Thee and me.</i>
<i>One and one</i> is two.	<i>Are.</i>
<i>Neither thou nor he</i> sleep.	<i>Sleeps.</i>
<i>These kind of habits</i> are bad.	<i>This, is.</i>

This applies to a thing near, or in contact with is; *that* to something further removed. *These* is the plural of *this*, *those* of *that*, it is therefore as incorrect to speak of *those* knives, when we hold a packet in our hands, as it would be to say *that* knife when we hold but one. It is bad english to say *them* boys, *them* chairs; *those* is the right word.

Oxygen.

If some black oxide of Manganese be put in the butt of a gun barrel (having the touch hole closed) and a leaden tube be closely connected with the muzzle, so that when the butt end of the barrel is in a smith's fire, the tube may be bent sufficiently to pass into a tub of water and have the end turned upwards under the surface; if then a bottle or jar be filled with water and inverted over the mouth of the tube, permitting the mouth of the bottle to remain under the water, when the gun barrel becomes red hot, bubbles will be seen and heard coming out of the tube and passing up into the bottle. As the bubbles ascend, the water will descend, until there will be nothing but the air of these bubbles in the bottle; this air is called oxygen gas. By keeping the mouth of the bottle under water, the gas will remain in it for any length of time.

There is no difference in appearance between this bottle and another, filled with common air, neither has it any smell. The only possible way to know that it is oxygen gas, is by its effects. The effects are various.

First, if an animal, (a mouse or a fly) be put into it, he will become exceedingly brisk and lively, appearing to breathe with great ease. Secondly, if a combustible

substance, such as a candle, coals, sulphur or wood be lighted and put into it, they will each burn with greater brilliancy. Even fine iron wire, if it be heated to redness, and immersed in it, it will melt and throw out vivid sparks.

Thirdly, if cider be put under this gas, it will become sour sooner than if it is left in common air, and fourthly, iron or any other metal, will oxidate much sooner if surrounded by it, than it will in atmospheric air.

That there is a substance which will produce all these effects, is ascertained by thousands of observations, and that 22 parts in the 100 of our atmosphere, and 75 parts in the 100 of water are this substance has been proven by many experiments; and yet its existence can only be established by its effects.

It must be confessed that it is very difficult to conceive of a thing which we cannot test by any of our senses, and perhaps it would be best that we should not attempt to conceive of the *thing* oxygen. It is but a name to designate that which is referred to as the cause of various phenomena.

The same conditions are necessary for breathing, burning, souring and rusting, and those conditions are, that there be oxygen where these processes are going on. In the language of chemists, oxygen is essential to respiration, combustion, acidification and oxidation. It is not to be understood, however, that oxygen will burn; it is not a combustible, or burning body, but no burning can go on if it be excluded.

If, then, oxygen be necessary to breathing, burning, souring and rusting, be one of the constituents of water, addition to this, it enter in all the composition of all vegetable matter, it must be universally diffused through it, let it not be forgotten that, before, we rather speak of an invisible thing called *oxygen*, itself.

The singular figures to be seen through some panes of glass, are owing to imperfections in the manufacture; prisms, concave and convex lenses, or forms compounded of two or more of them, are accidentally and unintentionally formed in the glass.

Government.

If men had always been willing to do as they would be done by, there never would have been any civil government, for everyone would have governed himself. But as far back as we have any account, there were men who were not willing to do this, and such there have been down to the present time. Some being stronger or more cunning than other men, took from them the fruits of their labor to support themselves or injured their persons to gratify a passion or caprice. He that would do so to one, would do so to another, and it is probable that several sufferers reporting to each other the injuries which had been inflicted on them, first gave rise to the idea of associ-

together for common protection. The no one singly could repel the invasion of rights, jointly they could do it with ease—the mere knowledge of their association would often intimidate the aggressor.

At first they probably had no agreement further than that they would stand together against a common enemy; but it is likely that long time elapsed before they discovered differences of opinion among themselves, regarding the easiest and most efficient means of defence; every man thought his own way best, hence they found it necessary to have some regulations by which they might be enabled to act together, if they could not exactly agree.

As soon as they made laws that was to be binding on the government was com-

men evaded the first law. It became requisite to have more laws annexed, to secure the performance of duty. This

Men have differed in opinion about the best form of government. Some have thought that one man should be selected, to whom unlimited authority should be given, who having no care about providing for his own comfort, would have ample time to lay plans for the conduct of others, and that he ought to be vested with full power to force a compliance with all his requirements. Others who have approved of selecting one man as their head, have thought best to give him partial control over them. Both these are monarchies; the first absolute, the last limited. The countries over which they preside are kingdoms; those who preside are kings. If several of these kings are associated together with a general head who can direct them, he is called Emperor.

Where several men are invested with power to govern all the rest, it is called an aristocracy. Those who govern are the nobility.

Republic means a state of things in which one man has as much power as another to choose how all shall be governed.

When men who are associated become numerous, they can not all convene to make laws and hence in those governments called republics, they meet at convenient places to choose men to do it for them. These meetings are called elections. The piece of paper which each man hands in, having on it the name of the person of his choice, is his vote, and the person who is chosen to make laws is a Representative, because he is supposed to carry or represent the wishes of those who elected him. Those who elect are constituents, because they constitute him their agent, invested with their share of power to make laws.

The meeting of all the representatives chosen in a district is called an assembly or Legislature, they legislate or make laws for that district or state.

If a number of states are connected, they choose a smaller number of representatives in each, who all meet in some central or suitable place to make general laws

for the whole. This is called a Congress.

What you have just read is said of the three forms of government, Monarchical, Aristocratical and Republican. The two first, never were the choice of the people; such history as is esteemed authentic, will shew that kings and nobles always got into power through the weakness or ignorance of those they governed.

If intelligence on the part of the people, enabling them to form correct judgements of the best laws for securing their natural rights to all, together with perfect freedom to act in accordance with such judgements,—if these be necessary to a republican government, then has there never been a republican government, for no such intelligent population has ever existed; and there has never been a community, the mass of whose citizens, were exempt from the influence of a comparatively small number, who were ahead of them in wealth, learning or something else, for which they claimed, and have always had, the power to control the choice of those whom they taught to look up to them.

That which seems to distinguish the present time, from any that has passed away, is a call for general instruction, which shall diffuse intelligence through all ranks of society. When this shall be attended to, and a wise disposition of the consequences shall follow, then will every man not only cease "to ask of his neighbor" what is proper for him to do, but he shall be exempt from the operation of that degrading influence which would prevent him from forming his own judgements, and acting in accordance with them. This will indeed be improved education! improved society, and of consequence improved government will result from it.

Arithmetic.

Practice is not useful in calculations to be made with federal money. It is a ready method however for those who are expert in business, but they acquire a much better knowledge of it at their desks and counters than can be had in a school room.

It is suitably named; nothing but practice can make the reckoner perfect in the use of it.

Tare and Trett is principally for mercantile men, and is nothing more than taking out the proper quantity for boxes, bales, &c. A little experience in a wholesale store, is better than weeks of theoretical teaching.

As many men are money lenders or money borrowers, Interest is quite in demand. If one man lends another 100 dollars for a year, there is a price set for the use of the money; we will say 6 dollars, (though it may be any thing they can agree on) this is called the rate per cent interest. A lends B 100 dollars for a year at 6 per cent per annum, then at the year's end, B will owe A 106 dollars; that is, the 100 which he borrowed from him and 6 of hire, which he pays him for the use of it during that time. A larger or smaller sum than 100 dollars, may be borrowed for a longer or shorter time than one year, at a higher or lower rate than 6 per cent. Be this as it may, the first thing to be done in Interest, is to find what the hire of the sum borrowed, at the rate agreed upon will be in one year. This is done by Proportion. 100 dollars bear the same proportion to any other sum lent, that the hire of the 100 bears to the hire of the other sum.

What is the interest of 500 dollars for one year at 6 per cent?

Here 100 dollars	100 : 500 :: 6
of principal or money lent, bears the	6
same proportion to	100 3000 30
500 principal, that	300
6 dollars of interest	0
or hire, bears to 30	

dollars of interest or hire. The work is usually done with fewer figures but with an eye to the above proportion.

The reason for pointing off	500
the two right hand figures	6
is plain, for cutting them off is	
always the same in effect as	30,00
dividing by 100.	

When the Interest for one year is found,

Those who know the meaning of all the words they read, and who are careful to observe what office each one performs, can get along without the adverb.

R. Nothing has yet been said about the articles.

H. And nothing need be said, but that they severally supply the place, (with a little addition to the meaning,) of the adjective *one*.

R. I feel at a loss to parse without conjunctions. Do we not need words to join our words and sentences together?

H. We do; and we have them; but it seems scarcely necessary to designate them as a class, when this joining is but a small part of what they mostly do. Like all other words, they have their meaning, and though they serve a conjunctive purpose among words and sentences, they frequently perform a very different office in regard to sense.

R. Interjections I have examined, and see no necessity for having such a part of speech.

SELECTIONS.

Education.

The Daily Sentinel of New York published six essays on education for all of which I should be glad if we had room, what follows is the first of the series.

Lycurgus resolved the whole business of legislation into the bringing up of youth.—*Plutarch*.

Train up a child in the way he should go, and when he is old he will not depart from it.—*Solomon*.

"What sort of Education is befitting a Republic?"—This is an exceedingly important question, to which we purpose, to the best of our ability, to attempt a reply.

A system of Republican Education ought to be *open and equal to all*.

No system of education which embraces any thing less than the whole people, deserves the name of republican; and no other system will reform a nation. Colleges to receive one tenth or one hundredth

part of the young population, may have their uses; but if citizens are to be trained up as citizens of a republic ought to be, the schools of the nation must be open, not to a hundredth, nor to a tenth of the rising generation; but to *ALL*. To shut the book of knowledge to one, and open it to another, is an unrepugnant mode of proceeding.

But some, we are told, are rich, while others are poor; some through superior skill or luckier fortune have obtained the means to afford their children an expensive, scientific, polished education; while others, either more idle or less fortunate, have not wherewithal to pay schooling for their children; or to support them beyond the age of nine or ten, even at a free school.

This is true enough. If it cannot be remedied, it is a farce to talk of republican education. So long as the poverty of the parent (whether caused by misfortune or misconduct,) is to determine the ignorance of the child, so long will education remain, as it now is, a manufacture of masters and servants. So long as a young citizen must have a rich father or guardian, before he can be trained in the way he should go, just so long will aristocracy be perpetuated, and equality among the citizens be destroyed.

Many think, for that very reason, aristocracy *must* be perpetuated, and equality *must* remain an idle word. They think it would be unjust and extravagant to give the poor man's child as good an education as the rich man's. They say that it is giving idleness the reward of industry, and offering a premium to improvidence. If a man, they argue, chooses to beget a family, without the means to afford them a rational education, whose fault is it, if not his own? It is not society that dooms his children to ignorance and inequality, but himself. Whatsoever a man sows, that let him reap. If liberty and equality are to be based upon injustice, better we should live without them. And injustice it surely is, that, if a man has been prudent, careful, fortunate, and

is now rich, his children should not have greater advantages than his poor; neighbor's, reduced to poverty, perhaps by idleness and intemperance.

The objection we have to this reasoning is, that it makes no difference between honest poverty and worthless poverty; and—a still greater objection—that it visits the sins of the fathers on the children.

All poverty is not caused by misconduct. A man is often poor, not because he is less industrious, but because he is more scrupulous than his neighbors; because, perhaps, he will not tell a falsehood, or stoop to a dirty trick, to get rich. Such poverty is honorable; and if the father's worth is to be the measure of the son's deserts, the child of such a poor man merits as good—nay, a much better education, than the fortunate speculator's, whose coffers groan under half a million.

But we deny the position, that because the parent is worthless the child ought to be neglected. That a man or a woman becomes a malefactor, may be an excellent reason why he or she should be shut up in a state's prison; it is no reason at all why their children should be condemned to ignorance, to temptation and to vice. The child of the greatest criminal in the republic has as good a right to a rational education, as the child of the most distinguished patriot. Does the child make its parents, or choose them? Is it permitted to determine whether they shall be worth less or estimable? According to what principles of justice, then can it be punished with ignorance for their faults or crimes?

A republican education, therefore, is not, in any degree inconsistent with the strictest justice.

But the question recurs; How are all children to receive a republican education, when some of the parents cannot even afford to support them at a free school, but must take them home at ten or twelve years of age to learn to work ten or twelve hours a day for their living?

We confess that this is a knotty ques-

tion. To require the parents to furnish the means is often to require an impossibility. To propose that the state governments should add to the fund already provided for the support and education of all children whose parents cannot support and educate them, might be to impose a somewhat onerous burden on the country, to encourage imprudent marriages, and augment the present increase of population. On the other hand, if poverty is to deprive a child, as it does now, of educational advantages, the monopoly of knowledge remains unrepealed.

What is to be done, then?"

In the second essay, the writer gives his views regarding the mode of raising the funds. About this, I am not uneasy, fully believing that if the public mind is once brought to bear on the subject according to its importance, there will be no difficulty in obtaining the means. I am clearly of the writer's opinion that "The miser himself, if he have but sense enough to balance a fair account, cannot object to this expenditure, it being no question whether we shall pay a tax or not; but whether that tax shall be to punish vice or to give instruction; to imprison and hang, or to educate."—ED.

In the British Parliament they have recently been legislating for the Jews.

Whether they have left the political and social condition of that people in better, or worse plight than they found it, I have not been informed, or have forgotten.

You will perceive by the extract which follows, what relation they stand in to the government and to their fellow subjects. Their case has caused much investigation, and elicited much discussion; it has called into exercise the best talent of Great Britain, and among the rest Macaulay, who is said to be the finest living writer in England. That which follows is from his pen.

Should any one be led to enquire why it is introduced here, it is answered for two reasons: that we may see how hateful is

form and covering as might be expected, in different climates, with different facilities for obtaining subsistence.

Men who have written about animals, have taken this little creature as the head of a numerous class, of which it is the least formidable. The Lion, the Tiger, the Panther, the Leopard and several of inferior note are placed in this class. There is good reason for it; the cat is known every where, and by referring to her, a description of the others can be given to those who have never seen them. Those who wish to describe them can say "think of a cat that would weigh fifty or five hundred pounds of a yellow or brown color, with, or without stripes or spots," as the case may be, pointing out, at the same time, any striking characteristic in the animal described.

It is very proper to class the animals called the cat kind together, for besides their general resemblance to each other in external form, they are very much alike on closer inspection. Their means of offence and defence differ only in size; they have the same number of sharp teeth and claws; in the latter there is a remarkable peculiarity. Though the claws of all the cat kind are long, strong and sharp, they cannot be seen or felt but at the pleasure of the animal; they thrust them out when they have occasion for them and keep them in when they walk by which the sharp points are preserved.

With the exception of the Lion, all the cat kind are said to be cowardly and cruel. However inferior their intended prey may be in point of size, and means of defence, they conceal themselves if possible, and spring upon it unawares; they secure to themselves the advantages of surprise and a fast hold. They are cruel in their treatment of the victim, giving it hopes of escape and then inflicting fresh wounds. Every one may have seen how a cat tortures a mouse in this way, but not until after she has disabled it.

It is curious to observe the difference between the eyes of a cat taken out of a dark and lighted room. When taken from

a dark place, the pupil or sight of the eye is large round and full; if held for some time before a lighted candle, the pupil contracts until it becomes a faint, upright streak or stripe.

The fur of the cat is sometimes used by hatters for coarse work.

The Inciter.

We have decided to issue the numbers as fast as they are printed off, and as we design to finish the present volume in March, it will be readily understood why numbers are received in advance of their dates. This arrangement can make no difference in a paper not devoted to news. I hope, however, we shall not in future, give them wrong numbers as in the last; you will please to call it No. 8.

Attention is again called to the necessity of letting us know as early as practicable whether the Inciter will be sustained, that we may prepare ourselves for its publication wherever our lot may be.

It would be superfluous to remind you that "what is every body's business is nobody's business," and that he who thinks "It is unnecessary for me to do any thing, because it will be attended to by others," should reflect that those others may be doing the same thing, depending on him. I repeat the request, that all who receive the paper will let us know whether they wish it continued. It will take but a few minutes of your time, and a few cents of your money.

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COMMUNICATIONS.

Discussion.

REUBEN.—What is the reason that in No. 7 of the INCITER, in the table of pronouns, there is no mention made of the possessive case? The words *my* and *mine* *thy* and *thine*, *his* and *hers*, *our* and *ours*, *your* and *yours*, *their* and *theirs*, do not oc-

eur. If I am not mistaken they are called pronouns of the possessive case in all the grammar books I have seen.

HIRAM.—They are so called in every grammar but Cardell's.

R. Would it not be better that we should call them so? Is it not more probable that one writer on grammar is wrong than that so many are?

H. It does look reasonable, and yet numbers cannot make a thing true. You know that once there were so few people who thought the world was round, that those who did think so, were in danger of suffering for it, if they did not keep their thoughts to themselves. I suppose you have heard how it was with Galileo.

If the people of the world had acted upon this apparently reasonable opinion, that the largest number has truth, you and I would have been instructed that the earth is a plane, not a globe. Are you not satisfied that they deviated, in this instance, from the principle that the majority arrive at truth in opinion, and that the minority should submit to them?

R. Yes; and I have good reason to be satisfied. You know it can be demonstrated that the earth is round.

H. I admit it, and for that reason I am pleased that the flat form of the earth was questioned; had it not been, could we ever have had its spherical form demonstrated?

R. No. But grammar is different; it does not admit of demonstration. How would you go about proving that any thing in grammar is true?

H. It cannot be proven in the same way that mathematical or philosophical truths are proven; it is founded in taste and not in the nature of things; its usages and rules are of course arbitrary, but they are, or ought to be consistent with common sense; and there is where Cardell's grammar is entitled to superiority. He classes words according to the offices they perform in the sentence, rather than by any systematic arrangement. In his opinion, a word should be a noun, verb, &c, because it performs the office of these parts

of speech respectively. Hence the same word becomes a different part of speech when its office is changed—where it bears a different relation to the words with which it is connected. Take as an example, I saw a *man*, *man* a *man*-boat. Here the same word performs three different offices; in the first it is the name of an agent; in the second it expresses an action of that agent; and lastly, it is used to designate the kind of vessel he was propelling; for you know it might, have been a steam or horse boat. Then the same word is noun, verb and adjective according to the office it performs.

R. But are there no pronouns of the possessive case?

H. The possessive case denotes property, or possession. Those words which are said to be in this case, often do so, but sometimes they do not; they never fail, however, in some way, to define or describe, and hence come with propriety under the head of adjectives according to Mr. Cardell's classification, for he calls all words adjectives which define or describe. You may employ your time usefully by placing any of these words, which grammarians say are in the possessive case, before nouns and satisfy yourself whether they do not serve the purpose of defining or describing. Your own observations will be more likely to lead you to correct opinions, than any thing I could say on the subject.

R. There is nothing said in the Inciter about participles. Why is this?

H. A participle partakes of the nature of a verb and adjective, say some grammarians. It either denotes action, or it is used in definition or description.

When it denotes action why should it not be called a verb, seeing that is the use of verbs? When it describes, why not call it an adjective?

R. How is it about the adverb?

H. Why it is a very convenient head under which to place all the words, which those unaccustomed to analyze sentences, cannot decently dispose of in any other way.

it can be found for a longer or shorter time by multiplying or dividing, or taking parts.

Discount is finding what a sum of money which will be due some time to come, is worth in cash.

The first thing to be done, is to find the worth of 100 dollars and its interest, if it were to be lent out till the time the sum to be discounted would be due. This done, we have two sums precisely in the same condition; we know what one of them is worth now, and from that we can find the present, or cash value of the other. What is the present worth of 530 dollars, due a year hence, allowing a discount of 6 per cent for present payment? We know that at 6 per cent 100 would be worth 106 at the end of the year.

Here 106 due a	106 : 530 :: 100
year hence, bears	100
the same propor-	<hr/>
tion to 530 due	106 53000 500
at the same time,	5300
that 100 cash,	<hr/>
bears to 500 cash.	00

Barter is giving one commodity for another, it is simple in principle, merely finding the value of each, and striking the balance.

Profit and Loss is equally so; when you know what you gave for a thing, and what you got for it, it is only to find the difference between the two, to know what you have gained or lost.

Simple Fellowship is plain. If two, three or more men trade together, the profits and losses should be proportioned to the shares they had each in the concern. Compound Fellowship is more difficult. It requires more thinking than is common at the age scholars are often at it, to comprehend any thing so complex.

Though the rules of mercantile arithmetic are based on plain principles, there may be questions given under several of them that require a good deal of thought to analyze them, though they are not generally useful.

I wish parents and teachers would read the following from the Annals of Educa-

tion, very attentively. If the ideas are new to any of you, pray do not reject until you have examined.—Ed.

Influence of prizes and rewards.

It is a maxim of metaphysics that the mind will choose the greatest apparent good. Now to say that we must give rewards, or distinctions to children, in order to induce them to learn, is to confess that we cannot make industry and knowledge appear to be a greater good than idleness and ignorance. But if industry and knowledge are really better, if a child's mind can comprehend that they are—which every case of industry proves to be *possible*—how unphilosophical is it to attach to learning any thing foreign, which weakens the impression of the excellencies of learning itself. For not to argue, as might easily be done, from the debasing influence which a cherished passion for rewards and ranks, choice seats and sweetmeats, has on the soul, to connect these with learning for the sake of attracting children to it, is like concealing a medicine in sugar or syrup, to make it palatable. Now though the child may take the syrup, medicine and all, yet if he can get it unadulterated by the bitter ingredient, he will prefer it. His educators set distinctions before him as an incentive to effort. But among his playmates a boy always can secure distinction without industry, and his educators have led him to regard this as a real good, he becomes passionately fond of it, and takes readier means than hard study to gratify his passion.

Again, if the educator would lead by rewards, the child, unless he is fortunately a son of poverty, can get and does get the things usually selected as rewards, *without* learning; and as they are the true good, the end for which he is to act, (for his educator has held them as such,) he knows he can get them and he will get them without having them impaired by connection with hard study. Hence the complaint we often hear of the children of the rich, that although in the given cases, they are naturally bright and in intelligent enough, they do not apply themselves at all. The

truth is, the child *without* application secures all which the educator has called good. He hopes for nothing additional by study; for he has already the things offered as rewards.

It is a serious though familiar argument against prizes and marks of distinction, bestowed in order to induce children to make effort, that they infallibly occasion disappointment to most of those on whose minds they have any influence. The majority of a class of course, must despair of success. These, then, derive no advantage from the offer of rewards. Despair is the death of effort. Suppose there is one prize. Of those on whom the incentive acts, all but one must be disappointed. This disappointment is *felt evil*. It dispirits the youthful aspirant, and checks future endeavor. Those even who put forth no effort, triumph over him whose best exertions have failed. Thus the system of influence instead of accelerating, on the whole retards the progress of youths often fatally.

Besides, this mode of calling forth industry occasions disappointment in another way. Often have I seen an ambitious boy so dazzled in looking forward to the prize, as to lose sight of the means of it—so agitated in thinking of the event, as to forget a demonstration, or principle in syntax, on the knowledge of which success depended. His anxiety in gaining the prize was the very occasion of his losing it.

Let me add another received maxim.—‘The end is more valuable than the means.’ Else why take the means? The means are always used for the sake of the end. A mother offers her little daughter a piece of cake or some sweetmeats on condition of her learning a specified task. Here the study is the means, the cake or jelly is the end presented to the child’s mind. In other cases a higher seat, a medal a ribbon or a gilt book is the end proposed. A certain measure of industry or attainment is the proscribed means. I do not say that the young will not use the means to secure the ends. But when they see what

trifles they have secured, they reflect that these are more valuable than the knowledge, which was the means of getting, (for the educator has authorised this valuation,) if they do not despise themselves for efforts disproportionate to the recompense of them, will they not at least undervalue knowledge extremely? How mean must that be, that is worth less than a bit of cake! Wonderfully precious must that seem to the boy, which secures an object, that, when obtained, gives more pain perhaps, than pleasure!

Let me mention a fact which is perhaps more decisive, as the rewards were attainable by all. A Sunday school teacher, dissatisfied with the motives presented by the managers to excite the attention to the lessons, stated the case clearly to his pupils. On the one hand by learning, they might gain the knowledge, and this would be their reward. On the other, by similar application, by taking the trouble of learning, they might gain the reward—books. Here was knowledge as the only reward, there were books of some value in the eyes of children, as the principal rewards, ‘You may have your choice,’ he says. Will you study your lessons well for the sake of *knowing*, or for the sake of rewards?’ ‘For the the sake of knowing—we wish no other reward,’ was the unanimous reply.

Zoology.

The least prized of domestic animals is the cat. Other tame creatures afford food, clothing or protection for man; the cat furnishes neither, except as a destroyer of rats and mice, she protects him in preventing their depredations on his property. But though she renders considerable service in this way, it does not call forth his gratitude to much extent; she destroys those vermin from an instinct of her nature for the pleasure of killing and eating, and not for his accommodation; it could not be expected she should get much kind feeling in return for the benefit.

The cat appears to be common to most countries with such difference of size

intolerance; and to expose the absurdity, the cruelty of placing men in unequal situations, and then requiring equal duties from them.

Intolerance belongs not to man; it cannot be within the province of a finite creature. Make of it an abstraction, who ever thought of requiring from an ignorant being, the same correct judgments he would expect from an intelligent one; or from a weak being, the same physical exertion he might reasonably require at the hand of one possessing great muscular power?

In practice, however, all this is exacted. Look with the eye of scrutiny through the ranks of society and see if it be not so. Examine all penal codes, and see if the same punishment will not be meted out to the criminal without regard to his opportunity of forming correct judgements; without aggravation or palliation from the situation his destiny placed him in; without taking into the account the powerful influence of surrounding circumstances. Can men permit it so to remain, and unblushingly call themselves intelligent and just? Surely not. The pupils under twelve years of age in any school house, could expose the absurdity, the enormity of such morality.—ED.

The Jews.

The Jews have been called a mean and sordid race, averse to agriculture and other honorable pursuits, fit only to be usurers, and incapable of patriotic feelings or social affections. This was only another example of the logic of bigotry in all ages. You first generate vices, and then put them forward as a plea for persecution—you make England but half a country to the Jews, and then you wonder that they have only half patriotism—you treat them as foreigners, and then wonder that they have not all the feelings of natives—you draw a line of separation, and then express astonishment that they do not mingle with you—you will not allow them to possess an acre of land, and yet complain that they devote themselves exclusively to trade—

you debar them from all exertion of honorable ambition, and then reproach them for taking refuge in the arts of avarice—in fine, you have for ages subjected them to every species of injustice, and then you condemn them for resorting to what is the natural resource of the weak against an overwhelming power—artifice and cunning.

Winter.

BY MARY HOWITT.

There's not a flower upon the hill;

There's not a leaf upon the tree;
The summer bird hath left its bough,
Bright child of sunshine, singing now
In spicy lands beyond the sea.

There's silence in the harvest-field,
And blackness in the mountain glen,
And clouds that will not pass away
From the hill-tops for many a day,
And stillness round the homes of men.

The old tree hath an older look;
The lonesome place is yet more dreary;
They go not now, the young and old,
Slow wandering on by wood and wold;
The air is damp, the winds are cold,
And summer-paths are wet and weary.

Symbols.

BY MISS JEWSBURY.

In youth the heart is like the bird,
The humming-bird of eastern bowers,
That ever (take the traveller's word)
Feeds flying on the dews of flowers.

In manhood, 'tis the eagle bold,
Borne upward to the cloud, the sky;
That scorns the rock and mountain hold,
Except to build on, or to die.

The sparkler of the woods is caught,
The eagle's bosom pierced ere long;
What symbol shall for age be sought?
What bird its emblem be in song?

The mocking-bird its likeness be,
That hath no music of its own;
That sings with imitative glee—
The bird of memory alone.

THE INCITER.

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Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA SOCIETY.—*Rising Generation.*

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No. 10.

EDITORIAL.

TO PARENTS.

Arithmetic.

I have treated in former numbers of the rules which are useful in doing the common business of society, the arithmetical rules are more curious than useful, and they mostly require adult heads to understand them. The square root is of great use for some purposes, but it is difficult to demonstrate to young persons, and I cannot perceive how any thing can be useful which is not understood. I am now fifty years old and have never had use for the cube root but to teach others how to perform operations on it, who were never to have any use for themselves. I can say the same thing of Permutation, Alligation, and Combination. Position is a curious rule for those who have a portion of time to bestow on that which is of no real use, but all questions which can be done by position, can be done by Algebra, and many which cannot. Besides Algebra is more simple, and of course more rational.

It may be said that difficult operations in arithmetic, even when they are of no particular utility, strengthen the mind and develop the faculties. This is true only in those cases where there is sufficient maturity of intellect to understand the reason of the operations. There is every difference between working by a rule to obtain a result, and proceeding step by step in conformity with intelligent analysis. The first is what scholars mostly do; their learning is in advance of their capacity to analyze.

I shall think it a hopeful symptom of the times, if I live to see it, when there is nothing of fashion in school pursuits,

when every pupil shall be permitted to study that for which he feels a taste, provided always that his acquirements can be turned to some profitable account. If this were so, all would be well; no scholar would choose to perplex himself with that in which he could see no meaning, and of course, could make no application.

A school room should be a miniature world; should contain within its walls specimens of many articles of commerce, together with weights and measures; and instead of pupils spending quarter after quarter in the study of abstract arithmetic, they should be employed in buying and selling, measuring and weighing calculating and changing money. In this way, they would become acquainted with the articles of commerce, including a judgment regarding their quality; with the various weights and measures applicable to them; their values; with the different coins and values; in a word they might thus become intelligent, practical accountants. To deduce a theory from familiar practice is natural enough, and is often useful; but practice upon theory is unnatural, awkward and often impossible, although it is on this principle that numerical operations are conducted. The student pores over abstract numbers, the mere theory of the science of numbers, and when called upon to make the application to business transactions, he perceives that all his study is of no avail;—he has all to learn over again, or rather he has to learn for the first time why and how calculations in business are made.

Caloric.

You have learned before this time that

some things which we know certainly by one sense, we can know nothing about by another, or perhaps by all the other senses, for example, we know nothing of sound by the eye, of sight by the ear, and so of the other senses. But that which I wish to call your attention to, at present in an especial manner, is something which we know only by the sense of feeling.

The word heat is familiar to you. You can neither see, hear, taste nor smell that which is called by this name; you know it only by the sense of feeling. If it is a substance, it has so far, eluded all attempts to ascertain its existence, but by its effects; it has not been seen, it has not been measured nor weighed. However much of it may be imparted to a body, the weight of the body is not thereby increased.

It is an unsettled question among philosophers whether it is matter or only a property or state of matter; whether it is an existence or only a condition of existence.

Without determining what it is that causes in us the idea of heat, which is the accompaniment also of so many changes in the matter around us, let us attend to the facts that we do feel a sensation which we call heat, and that with the change of bodies, a change of temperature is observable.

That which effects all this is called heat; chemists call it caloric.

Of all substances, if substance it be, it is the most plentifully diffused in nature, no body being known, (not even ice) which does not contain some of it.

Chemists speak of Caloric in two states, *latent* and *free*. By latent caloric they mean that heat which is in a body and cannot be perceived by any of our senses. Take a small piece of cold iron and hammer it briskly, it will become hot. It is said caloric is combined with or lies hidden in the iron; the pressure of the hammer brings it out, it is then free.

Free caloric is perceptible by the sense of feeling; latent is not. Free caloric affects the thermometer, latent does not

Free caloric is that which is necessary to effect a change in a body; latent is that which is essential to continue it such a body as it is.

There is in free caloric a constant tendency to equalize itself, that is to be in all bodies that are near each other, in such degrees, that they will affect the thermometer alike. If you were to take a sheet of iron box six inches square and put in it a piece of red hot iron, and on that several cold pieces, if you put the lid on the box cover the whole up for half an hour, it will be found that the hot piece is cooled and that the cold pieces and the box are heated until they are of the same temperature. If the cold part were some other substances such as glass, slate, &c., it would take longer, though in time they would be alike hot. This difference is the time required to bring different substances to the same temperature, is owing to what philosophers call their relative absorbing and radiating powers. Many observations have been made regarding it and the result of them all is, that in general dark colored, rough surfaces, absorb and radiate more freely than white, bright or smooth ones. Take a bar of iron, let a portion of it remain as it came from the hammer, file another portion bright with a coarse file, and put a fine polish on the third portion. Now place it in a situation (near a red hot iron bar) where the three portions will have an equal chance of being heated. The black iron will soon be too hot to touch, when the rough filed will not cause pain, and the polished part scarcely produce the sensation of warmth.

When caloric enters the surfaces of bodies at the same time, it does not pass with the same rapidity through the mass of different substances. Take an iron bar, a piece of wood and a piece of charcoal all of the same size; place them by the side of each other with an end in a smith's fire; in a short time the end that is inserted in the fire will be red hot in the case of each; by applying your hand to them

you will find that the caloric has been transmitted through their particles very differently; the iron will be heated at the greatest distance from the fire, the charcoal at the least. This is called the conducting power of bodies. It varies, perhaps in all known substances. Those bodies through which caloric passes rapidly, are said to be good conductors. A knowledge of the difference of bodies in this respect, is important in selecting articles of clothing, materials for building houses, &c.

Free or radiant caloric when imparted to a body, expands it. The blacksmith, aware of this, heats the tire or hoops of the wagon wheels to redness; this lengthens them till they will go on loosely; he then poars on cold water, which prevents the hot iron from burning the wood and causes the iron to contract and fit the wheel. This is a case of the expansive power of caloric.

Definitions.

PULVERIZED. When a substance is reduced to powder by grinding, hammering or other means, it is said to be pulverized.

CALCINED. When a substance is heated until it falls to powder, or is very easily powdered, it is calcined. A powder formed from a metal in this way, is sometimes called a calx; two or more such powders are called calces.

An **INFUSION** is something extracted from a substance by pouring boiling water over it.

A **DECOCTION** is what is obtained from a substance by boiling it in water.

A **MACERATION** is that which is obtained by steeping or soaking a substance in cold water.

A **SOLUTION** is that which is taken up by a transparent liquid without changing its transparency. Salt dissolved in water is a solution,

A **DIFFUSION** is that which is taken up by a transparent liquid, which makes it cloudy or opaque. Milk poured into water is a diffusion.

A **TINCTURE** is something extracted

from a substance by alcohol, (whiskey with all the water taken from it.) Laudnum is a tincture of opium.

MALLEABILITY is that property of bodies by which they may be spread out with pressure; by hammering or rolling.

DUCTILITY, that property by which they may be drawn out into threads or wire.

FUSIBILITY, the property of some bodies to be melted, or made liquid by heat.

TRANSPARENT, that can be seen through.

OPAQUE, that cannot be seen through.

BRILLIANT, shining.

Tanning.

If you eat a persimmon, chew the inside of oak bark, or suck a piece of alum, you will feel a puckering or drawing together of the skin in your mouth. That principle or property which produces this effect, is called Tannin, or the astringent principle; it exists in almost all vegetables, more particularly in the gall nut and in bark.

The skins of animals are made of Gelatine, (glue,) oily matter and fibre, (fine sinewy threads.)

The tanner puts the skin into lime water which takes up the oily matter of it, and loosens the hair, which he then scrapes off. His next work is to remove the lime and pieces of flesh; this he does by scraping and washing. When the skin is free from every thing but the gelatine and fibre, it is ready for tanning. It is now put into liquor made by soaking ground bark in water; this liquor is kept in a deep pit called a vat, and the skin is taken out every day for weeks, and kept out each time an hour or two. This is called handling, and the vats in which it is done, are called handlers. The skilful tanner knows when the ooze, (liquor,) ought to be made stronger. When the tanning has progressed to the proper stage, the skins are put away into other vats called layers, where they are spread out carefully with ground bark between every two skins. Large skins remain in the layer a year before they are completely tanned.

If the skin is for sole-leather, nothing

further is done than taking it out of the layer and drying it. If it is designed for upper leather, it is shaved on the flesh side until it is smooth, and of a proper thickness. This is currying; it is performed with an instrument having a turned edge. After the leather is curried, it is ready for the shoemaker, saddler or others who work in the article.

The leather called Morocco, is tanned with a liquid prepared from the leaves of the Sumach. The skins are put into this liquor when it is warm, and become tanned in a few days. Great pains is taken with morocco in the finishing. Good morocco is made of goat's skin.

Before skins are tanned, they become stiff and hard on drying after they have been wetted, this is because water dissolves glue. The glue of the skin softens with the water and would dissolve if it were to remain in it long enough. The astringent principle used in tanning, combines with glue, and forms a substance that will not dissolve in water. This is the use of tanning. The skins are stronger before they are tanned than the leather is which is made from them, but without tanning they would become very soft every time they were wet and and hard and stiff when they become dry.

There are ways of preparing skins for gloves and other nice purposes, in which alum and other things are used, but the leather made in these ways is not suitable for exposure to wet.

Slavery.

CHARLOTTE.—Mother, I often hear people talk of slavery; what does the word mean?

MOTHER.—It has several meanings. By some people it is used to express that state of dependance, in which the poor are to the rich every where; some use it in a political sense, to show that one man votes as he does, on account of his relation to some other man; by some it is thought applicable wherever one can influence another to do as he wishes him to; but I suppose your enquiry relates to something

quite different from either of these; where one man is the property of another; he that has the property being called owner or master; the property a slave.

C. I do not know what you mean by one man owning another.

M. Do you not know what is meant by owning a horse or cow?

C. Yes. People raise animals, or buy them.

M. In the same ways they become possessed of slaves.

C. Buy a man! who do they buy him from?

M. From whoever owns him.

C. I cannot see how any one comes to own him in the first place. Does the first man buy a little child from its parents and then raise it?

M. No, the parents are slaves themselves, and do not own their children. The owner separates the children from the parents, at any time he thinks proper and sells them.

C. Takes children from their parents and sells them! How can he do that? Why do they not prevent him? Surely parents have a right to their children until they are old enough to take care of themselves.

M. So they have, if they are not slaves themselves.

C. And what is the reason they have not the same right?

M. They have the same right, but the law takes from them the power to use it.

C. Why that is a strange law, who made it?

M. There have been such laws for a long time, I cannot tell you who made them.

C. Where are these slaves? I know of no children who are sold from their parents. Have any of the men and women that I know, been bought or sold?

M. No it is only people of color that are slaves in this country.

C. Are all the colored people about here, slaves?

M. None of them. There are no slaves in Pennsylvania; they are mostly in the

southern states. There they are nearly all slaves.

C. I don't understand this thing at all. You say that children are slaves because their parents are; why were their parents slaves?

M. Because *their* parents were.

C. But when did it begin? How did they make the very first colored person to be a slave? Where did they get him from?

M. They brought him from Africa, a country where all the people are black.

C. Are they all slaves there?—and if they are, who made them slaves?—who are their owners?

M. They are not slaves but they have very bad governments. They are an ignorant people, and have kings over them. If two of their kings have a dispute they declare war against each other, and they compel their ignorant subjects to turn out and fight their battles. They fight desperately, for they all know that the conquering party will make slaves of those they conquer. They sell their prisoners to persons who make a trade of going there to buy them. It often happens that these traders are the cause of the disputes between the kings. They promote quarrels among them for the purpose of bringing slaves into the market.

C. Are all the slaves obtained in this way?

M. No. The way the greater part of them are obtained is, if possible, worse than this.

These ignorant people have their amusements—their festivals and their dances. The traders, who are called kidnappers go under cover of bushes and banks and surprise them with a discharge of fire arms; while they are in this state of fright, take them prisoners, tie them and take them off to their ships. Several hundreds of them are chained down in the vessels and taken to the slave market where they are sold.

C. The people who buy them do not know surely how the kidnapper came by them.

M. Yes they do.

C. And why do they buy them?

M. Because they are as bad as the kidnappers!

C. Are there any people in this country wicked enough to buy these slaves from the kidnappers?

M. I cannot tell. We have laws to prevent them from bringing any here. If any do come, they must be brought secretly.

C. If none are brought now, how does it happen that there are slaves here?

M. They are the children of those who were brought long ago.

C. I do not see how that mends the matter. The parents were taken wrongfully and they cannot have a better right to the children than they had to their parents.

M. They say they paid their money for them.

C. What does that signify? They paid it to the kidnapper who had no right to receive it. He had no right to the slave, how could he give any right to the buyer? And as the buyer had no right but what he got from the kidnapper he could have none; and if he had no right to the parents, how could he possibly have any to the children?

M. He has none, indeed, but that which the law gives him.

C. Mother, does the law give a man a right to do wrong? If it does, law must be very bad. I thought laws were made to make people do right.

M. That is what they are said to be for.

C. But what use is there in saying, if they do not do it? Why this slave matter is in a worse condition than if there was no law. Then every one could stand up for his own rights. Are there many slaves in this country?

M. Something like half the people in the south are slaves, and many of the owners cannot be too much blamed for the manner in which they treat them. They feed them poorly; clothe them badly

and break up their families by separating parents from their children, and from each other; and worse than all, they keep them all in ignorance.

C. We might very well expect this. If a person can be so wicked as to keep another a slave, I should suppose he would think it little to do all you have said and more.

M. But if they will hold them, they ought to give them enough to eat and wear, to make them comfortable.

C. But that would take part of the profits and I dare say that is what they keep them for.

M. Well even if they did not give them plenty of wholesome food and necessary clothing, if they would only permit husbands and wives, parents and children, brothers and sisters to remain together.

C. You may be sure they make more money by selling them from each other than by keeping them together, or they would not do it.

M. It seems as if I could almost make some excuse for all they do except bringing them up in such extreme ignorance.

C. Why mother do you think they could keep them slaves, if they did not keep them ignorant? I don't. Surely if there are so many of them as you say, if they had the knowledge how to do it, they would soon set themselves free.

M. But if the owners would treat them better, they would not so much desire to be free.

C. And would that be right? I think every body ought to be free, and if they ought they should wish to be so, for it must be right for us to wish to be whatever we ought to be.

Would you like mother, that I should be a slave to somebody, even if he would give me the best victuals and clothes and let me live where I could see you every day, and teach me a great deal of useful knowledge into the bargain?

M. No my dear, I had rather follow you to the grave.

C. I expect so; then the wrong

must be in having the slave. Some people may be less cruel, or more kind to their slaves than others, but that does not help to make slavery right. I have heard of robbers who gave back part of the money they had taken but that would not make robbery right; it only shows that the robbers had something good in them if they had given it fair play.

Mechanical Powers.

Every thing inclines to fall with a force equal to its own weight or gravity. That which stops or prevents it, must press just as much upward as the gravitating or falling body presses downward. If it were not to do so, both would approach toward the centre of gravity. If the lower body should be made to press upward with more force than the upper presses downward, they would both recede from the centre of gravity. To prevent a body then, from falling, there must be an upward pressure exactly equal to its tendency to fall. To raise it ever so little, extra force must be applied. When you lift a stone or any other body from the ground, you press upward with more force than the body presses downward; if you did not you would not move it. That which has just been said is for the purpose of turning our attention to the direction and quantity of force necessary to move a body.

You know that you are able to raise some bodies and move them in any direction, by your own strength or muscular power; and you know too that there are some bodies which you can not thus raise and move.

You may find a stone or a log so heavy that you cannot move it. If you get a rail or a strong pole, put one end under the object which you wish to move and raising the other end of the pole high, place a stone or block under it as near the body to be raised as you can get it; if you then bear sufficient weight on the upper end of the pole the heavy body will ascend. The contrivance by which you effected this is one of the mechanical powers and is called a Lever. The stone or block on

which the lever rested, is the Fulcrum.

That you may know how much the heavy body weighs, we will suppose that the lever was a rail eleven feet long—that you weigh one hundred pounds—that the fulcrum was placed one foot from the short end, consequently ten feet from the long end of the lever, and that it required all your weight to raise the body. If you had exactly balanced it, it would have weighed exactly one thousand pounds; as your weight raised it, it weighed a trifle less.

A scale beam is a lever having the fulcrum in the middle; any weight at one end will balance the same weight at the other. A steel yard is a lever having the fulcrum nearer to one end than the other. Just in proportion as one division of the lever is longer than the other, may the weight suspended from the short division be heavier than that which is suspended from the long one. If the steel yard is twenty-one inches long and the fulcrum is one inch from one end, then will a weight of one pound balance twenty pounds.

This kind of lever is not only useful for raising great weight; it is in the construction of all such implements as pincers, snuffers and scissors.

You may observe that it requires more force to make scissors cut at the point than at the heel; this is because the lever is becoming more and more equally divided, as the cutting point recedes from the fulcrum.

Do not let it escape your notice that the short division of pincers, snuffers and all other levers, moves slower at the end of the long division, and hence as their movements are made in the same time, the long end passes through the greatest space; that is, moves through the greatest distance. In the case of the rail with the fulcrum ten feet from one end, one hundred pounds raised one thousand. But if the one thousand pounds moved through six inches of pace, the one hundred that moved it at the long end, passed through ten times as much, or five feet.

To do by some contrivance what we

could not do by mere strength, is called gaining power, but to do it we must move further; then we must take longer time or move faster; hence it is said we cannot gain power without losing time.

Chemical Attraction.

Whether attraction of any kind be a property of matter, or some thing distant from it, may never be known to man; at present, however, he does not know, nor is it of any consequence; he observes effects and philosophers have agreed to call that, (be it what it may,) which causes them, attraction.

Observation has proven that chemical attraction or attraction of composition, prevents certain invariable phenomena or appearances, and from these are formed what the chemists call laws. These laws are deduced from many facts; some of them are the following.

Law 1st. Chemical attraction takes place only between bodies of a different nature.

2d. It takes place only between the most minute particles of bodies.

3d. It takes place between two, three or a greater number of bodies.

4th. A change of temperature takes place at the instant of combination.

5th. The properties which characterize bodies when separate, are altered or destroyed by their combination.

That these laws may be better understood, I will make an example under each, which will enable you to make many others, when you reflect a little.

Ex. 1st. Two pieces of iron or any other simple element may be brought into one mass by fusion. This is not effected by chemical affinity; it is the attraction of cohesion, and mechanical means will separate it. But if oxygen and iron be brought to act on each other so as to form a homogeneous mass, mechanical means cannot separate them. This is a true chemical combination.

2d. Though copper and zinc cannot be united in large particles, yet divide them

minutely by fusion mix them together and they will unite.

3d. Copper, tin, antimony and other metals may be melted together into one homogeneous mass, as completely beyond the reach of mechanical means to separate them, as if there were but two in the combination.

4th. Pour some oil of vitriol (sulphuric acid,) into a phial containing water; a sensation of heat will be felt by the hand holding the phial. Or put some snow and a little salt together, as they unite, cold will be felt.

5th. Iron is hard, tough and brilliant; Oxygen supports combustion and is the principal of respiration. When a chemical union takes place between these two substances, the newly formed body, rust or oxide of iron, is neither hard, tough nor brilliant like the iron, nor will it sustain life nor support combustion like the oxygen.

There are other laws of chemical attraction as well ascertained as those which have just been given, but I think it best not to bring them before you at present. The great art in any study is to present to the mind, enough at once, to keep it active without confusing it.

Hoping that you have examined such of the simple elements as were within your reach and fixed in your memory their characteristic likenesses and differences and that you will impress upon your minds the five laws which have been given, we shall next examine some compound bodies which result from the action of the simple elements upon each other as set forth in those laws; and first of Acids.

You have already heard that oxygen is the cause of sourness or acidity. It does not make every thing with which it unites, sour. Those which do become sour by a union with it, are called by chemists acidifiable bases. These seem pretty large words, but they only mean substances which can become sour.

If you put fire to a bit of sulphur, a match for example, a very suffocating va-

por passes from it; this is the result of the chemical union between sulphur and oxygen; it is called sulphureous acid gas. Water attracts it strongly. Take a saucer with a small quantity of water in it, and in the middle of the saucer put a small stone, higher than the surface of the water; then set fire to a small lump of brimstone, put it on the stone and invert a high jar over it permitting it to remain for an hour; then remove the jar, set the sulphur on fire again, (for it will not burn long after it is covered) permit it to remain another hour, and do the same way several times over the same water; on tasting it, the liquid will be found to have acquired a sour taste. The sulphureous acid gas formed by the burning of the sulphur, was absorbed by the water, and has become sulphureous acid or weak oil of vitriol. Because this can be done with sulphur it is called an acidifiable base. If the burning be done in pure oxygen gas instead of atmospheric air, the result will be strong sulphuric acid.

One example of the formation of an acid will be sufficient; they are all of them composed of an acidifiable base and oxygen.

There are many acids, but comparatively few of them are of much importance, these are the Sulphuric, Nitric, Muriatic, Prussic, Fluoric, Acetic, Gallic and Carbonic.

Sulphuric acid, as has been shown, is obtained from sulphur, Nitric has Nitrogen for its base; the bases of the Muriatic, Prussic and Fluoric are not well known. The first is obtained from common salt; the second from Prussian blue and the third from Derbyshire spar. Acetic acid is concentrated vinegar; Gallic acid is abundant in gall nuts; Carbonic is obtained from the combustion of charcoal and many other sources. It does not exist in the liquid state, it is either in combination with other substances, or in a gaseous form.

To Parents.

It is not too early an age of the world to remind you that the names of all things-

their qualities and their actions are arbitrary. That there is nothing in any of them naturally adapted to their several uses. The name *dog* does not naturally bring to the mind the idea of that animal, for the same idea has to be called up to the german by *hund*. If we speak of his color, the sound *black* has no natural relation to that appearance, for in german he is *schwarz*. We say he *runs*, but there is none other but arbitrary fitness in the word, for in german he *springs*. This is equally true of all words in all languages.

Accident or choice, gives names, custom confirms them, habit makes them familiar, until there seems something like unquestionable propriety in the names to which we are accustomed.

The same kind of arbitrary usage is extended to the selection and the arrangement of those names; hence are deduced rules for the formation of sentences; hence all the grammars of all languages.

There is a necessity that names should be arbitrary, because there is no natural relation between any thing, property or action, and its name; and out of this fact, probably has grown the apparent and acknowledged necessity for the multiplication of parts of speech and their subdivisions into case, tense, &c., with their relation, agreement and government, but these are equally arbitrary. That *am*, *art* and *is*, should express the condition of being of three persons, in grammar, is perfectly arbitrary. There is no impropriety except what custom makes, in transposing them. *I is*, *thou am*, *he art* or *I am*, *thou am*, *he am*, have every thing to recommend them which can be said of the usual form, except habit. This is so in the plural, for we say *we are*, *you are*, *they are*, yet it is not so because the agents are not as well designated in the singular as in the plural, by their own forms.

If we admit that it is necessary to continue the distinctions and divisions which accident or carelessness has made, and habit confirmed, it is no argument in favor

of further distinctions and subdivisions, when those already on hand are cumbrous and perplexing. Without restriction, grammars would be as large as bibles; with proper restrictions they would be reduced to the size of toy books; and instead of twenty for one language, there would be but one for all languages.

A question here arises;—should a grammar be constructed upon the principles of the language, or the language be constructed upon the principals of grammar?

The latter, doubtless, if grammar means the proper arrangements of words; for the proper arrangement of words must be such as is presented in the natural order of thought.

In all cases the agent is the first idea presented to the mind; qualities or properties constituting a description of the agent (if needful) come next; then either the action, or the object on which it terminates. This is the essential, and the only essential construction of all sentences, because it comprises the essentials of all thought. Relations to other things—the time, place, manner, and attendant circumstances, are incidental.

Instructive thought is the image of things, and language is the representative of thought. The thought should be the true likeness of the thing, and the language should truly exhibit the likeness; this it cannot do unless the order of thought is pursued in the communication of it. Ex. *I*, *thou*, *he* or *she* eat victuals. Here is an agent, an action, and an object on which the action terminate. The agent requires no description in either case; the form of the pronoun supersedes the necessity, of course no adjective or describing word is required. By permutation the three words admit of six different positions, such as victuals eat *I*—eat *I* victuals, &c.

It may be remarked that grammar has nothing to do with the formation of these words; that, as has been said, is the result of taste, accident, &c; but merely with their proper arrangement in a sentence, to convey the idea intended to be

conveyed. Habit would make any of the six ways of arranging intelligible, and a grammar rule might be made to embrace all such cases—but it must be plain that there could be five other differing and opposing rules, on the same principle. It is only to assume in each case that the construction is right, and then make the rule to suit it. We have now six rules relating to the same question of arrangement and all susceptible of proof, to those whose usage predispose them to the admission of the evidence. Something like this is the origin of all opposing systems of grammar; that is by constructing grammar by the language, instead of bringing the language to a grammatical criterion. In this, as in all cases, the agent is first thought of, and for this reason should be first named. The act of eating is the next idea; and the food eaten comes last in order, simply for this reason, it should be the last named. Here is the foundation of a grammar rule that applies to all cases, at all times and in all the languages in the world. It is as immutable as the order of thought and is the true representative of it.*

*It should not be overlooked that the order of thought is always the same, when it is not led out of the natural channel by language. The agent, the act, and the object. It might be contended, (and the German language is constructed on this assumption) that the object is in the mind prior to the action; this would be a question to be determined by minute observation on our own thoughts—we would then perceive who had been lured from nature by the forms of language. It would be a curious and useful employment, to ascertain whether I eat victuals, or I victuals eat. coincide nearest with the train of natural thought. Perhaps the Germans are right. *Ich will heim gehen*, may be better than I will go home. This will depend upon whether home be in the mind prior to the idea of going. Nothing can determine this, but close observation on our own thoughts.

To know the exact meaning of words, that is, to know that the words we use convey to others the precise idea in our own minds, is of great importance—the difficulties which occur in communicating thoughts, for want of this, are more in number and greatly more unpleasant in their consequences, than any that can arise from diversity of arrangement—errors in the latter may lead to criticism—errors in the former to misinformation—serious misunderstandings and interminable disputation, with all its concomitants, distrust and every kind of bad feeling. Try it with the word religion. Observe when A uses it, if it conveys the idea in his mind, to any other letter of the alphabet. They will dispute—why? Because they have not settled the exact meaning of the word.

COMMUNICATIONS.

Botany.

Having described to you the different kinds of roots, I now propose to ascend and give a description of the different stalks or stems; of these there are also seven varieties. A short description of each will enable you to distinguish them wherever observed.

1st. *Caulis*, is that kind of stalk which we see in trees, shrubs and most of the annual plants.

2nd. *Culm* contains joints as in the grasses, corn, sugar cane, etc.

3d. *Scape* is a stalk having the flower but not the leaves, as in the dandelion.

4th. *Peduncle* or flower stalk; this in fact is but a subdivision of the *caulis*, as it grows from a larger stalk and bears the flowers and fruit.

5th. *Petiole*; this might likewise be considered as a subdivision of the *caulis*; it is that part which supports the leaf.

6th. *Fronde*; this kind belongs entirely to the Cryptogamous plants.

7th. *Stipe*, the leafless part of a mushroom.

As leaves and flowers proceed immedi-

tely from buds, I will here just mention, as you may not perhaps have observed it, that of these there are three kinds.

1st. The flower bud which contains one or more flowers.

2nd. The leaf bud which contains one or more flowers.

3d. The mixed bud, these contain both flowers and leaves. The peach tree affords an example of the two first, as the flowers and leaves spring from different buds.

The lilac affords an example of the third, for here the flowers and leaves are found in the same bud.

A leaf bud placed in the ground would perish, while a flower bud in the same situation would perish.

We come now to the consideration of the leaves, of these you already know there are great varieties. These varieties are named from their resemblance to other objects; their resemblance is not, however in many cases very perceptible, and their names are most generally borrowed from the Latin. You would find it difficult, I fear, to discover their application and could be only burdening your memory with unintelligible technicals, were I to attempt to give any thing like a list of them. I will however give you a few of the most obvious, which may enable you to form a more correct idea of the manner in which their names are derived.

Orbicular, a round leaf as in the nos-
trition.

Reniform; from *ren*, meaning kidney. It is sometimes called kidney form; the round ivy has a leaf of this kind.

Cordate; from *cor*, the heart; or, as it also called, heart-shaped.

Deltoid; from the Greek letter delta. This kind may be seen in Lombardy pop-
lar.

Sagittate; from *sagittus* an arrow; this you may observe in the large leafed sorrel.

Palmate, or hand-shaped; the oblong segments or parts of the leaf arise from a space at the petiole which resembles the palm of the hand.

Digitus; from *digit* a finger. It dif-

fers from the palmate in having no palm, but merely fingers.

When the leaves are notched at the edges, they are said to be emarginate, serrate, etc. according to the manner and depth with which they are indented or notched.

When two or more grow upon the same petiole they are called compound; the rose has a compound leaf. Some leaves fall off before the expiration of summer, others at the commencement of winter, and others remain during all the changes of temperature. These different circumstances are expressed by different terms.

Winter Scene.

The timid rabbit bounds along,
Finding no leafy covert nigh,
And now is heard no mingled song
Of merry blackbirds winging by.

The arching sprays which bent so low
When laden with the yellow fruit,
Are covered o'er with wreathes of snow,
And all the summer birds are mute.

The little brook which used to glide
Amid the meadow where the grass
Dipp'd its green blades—and then to hide
Beneath the bushes—and to pass
Puriling along, is covered now
With glassy sheets of ice so clear,
That you may see its waters flow,
Wheeling in eddies, far and near.

And flashing icicles hang down
From cottage eaves and forest boughs,
And glitter brightly as the sun
Upon his daily journey goes.

The sky's dark depths are clear and blue,
Amid it fleecy clouds are straying,
Upon their pathway floating through—
The cold wind 'mid their white snows
playing. R. N. S.

The Land Tortoise.

The land tsrtoises are of different sizes the largest I ever saw was between four and five inches in length, and two in height.

The tortoise is enclosed in a hard shell consisting of three parts. The upper one is in the form of an oblong cup or basin inverted. The lower shell can be made nearly flat at the pleasure of the creature, though by a joint in it, the two portions may be made to form a considerable angle when he wishes to shut himself up.

His legs and his tail are covered with scales. He exists in a torpid state through winter and is only seen through spring and summer.

The tortoise lives to a very great age. I found one a few days ago with a name cut on the bottom of the shell in 1777, which is 57 years since. F.

SELECTIONS.

Education.

What sort of education is good enough for the Common People?—In approaching the details of our subject, this is the first question to be asked and answered. If the answer be “a plain English education, that is, reading, writing, accounts; and by way of a finish, a little grammar, and and geography”—if this be the answer, then public education is no such great thing after all. It is all very well and very proper in its way, and the public attention ought to be called to it, as one of fifty other things, to be attended to. But to talk of education regenerating the nation; to speak of it as the most important of earthly concerns; to call on the present generation, as they value the freedom and happiness of the next, to unite heart and hand, for the establishment of public education,—all this we think, is to make a mountain of a mole hill. A large proportion of our population can read and write and cast up an account; and if all they are to gain for their children beyond that, is a little grammar and geography, (which many of them probably have already picked up at home) no wonder that they sit with their hands across and yawn, and wonder that people should make such a fuss about public education.

We, for our parts, have a very different conception of the matter.

If we are asked, “what sort of education is good enough for the common people?” we ask, in reply, “what sort of education is good enough for the richest and most favored classes in the land?” The answer to the one question is, with us the answer to the other.

“Do we propose,” we shall be asked, “that every poor man’s son shall study Hebrew, and his daughters learn painting on velvet?” No; but not because Hebrew and velvet paintings are only good for the rich and privileged; but only because we think them useless for any one.

We do not enquire then, “what is good enough for the common people?” we enquire, “what is good enough for *human beings*?” What makes man a better, wiser; a more enlightened citizen, a more useful member of society? If we are asked whether we propose mathematics, astronomy, history, the modern languages, chemistry, physiology, comparative anatomy, drawing, music, as branches which should be taught to every child in the republic; we reply, if any one, or if several, or if all these branches are essentially useful to human beings—if they contribute to mental cultivation, to moral improvement, and if they do not occupy time which might be more importantly employed—we do most assuredly propose them as proper to be taught in all state schools, to every child, rich or poor, patrician or plebeian. We may chance to consider some branches of study which now occupy much time, unfit for public schools. But if we do, it will be, not because they are too good for the people, but too useless for them; not because they are fit only for the rich, but because they are fit for no body.

We ought to reflect and reason on this subject, as we may suppose an enlightened parent to do, who, possessing ample means sits down to consider how he shall train his favorite child. Does he ever enquire what is good enough for it? No, he ex-

quires what will benefit it. He enquires how he can best and most usefully employ its time; what studies will cultivate its intellect and develop its capabilities. He enquires what situation will best mould its dispositions to virtue and habits of wisdom. And, governed by such considerations, he decides. So ought a republic to reason, and so to decide, for all her children.

When we propose a system of republican education for the people, therefore we propose that it should be *the best*—not the most extravagantly expensive, not the most fashionable—but the best that the nation, in its wisdom, may be able to devise. We need not be told that it will be imperfect. Every thing human is. But if it be only as scientific, as wise and as judicious as modern experience can make it, it will regenerate America in one generation. It will make but one class out of the many that now envy and despise each other; it will make American citizens what they once declared themselves, *free and equal*.

Such a view may be set down as Utopian, or ridiculed as extravagant. We cannot help that. It is the republican—and the *only* true republican view of the subject. And, unless we greatly mistake the times, it is the view that this nation will soon take of it.

The following is extracted from an address of the President of the Nashville University, Tenn.

There is evidence from all quarters that the spirit of improvement is abroad. When such sentiments as are contained in the address, can emanate from such a source—from a monopoly of intelligence, we may rest assured that they proceed from conviction, or motives of policy. If from the former, we have but to hail, and cooperate with them; if the latter to beware lest they entice us from the righteous purpose of elevating the human character, on the broad ground of equal rights.—ED.

"I have asserted that colleges have done good and that learning has been useful.—

That, like wealth and power, when possessed only by a few, it has often been abused to the injury of others. That our college graduates have generally been the faithful sentinels and advocates of popular rights. A. That if any appear to be swerving from the straight path of rectitude, it is because they have observed an ignorant mass to operate upon. B. That the only remedy of the evil—the only preventive of its recurrence and of its rapid increase—is the immediate education of a much larger portion of the people. C. Not the giving them what is called a common school education—the most of them have this already—and it does not suffice. The man who can merely read and write, is no match for the thorough-bred political gladiator. He cannot dispel the sophistry of the village attorney or the village gazette.—He is just the man to be led astray by the newspaper essayist. And the newspaper is the very engine employed to gull the people who can read, but who are too ignorant to discriminate, to reason and to judge.

None but enemies of the people will ever gravely maintain that a common school education, in the ordinary meaning of the phrase, is all they need. This would be virtually telling them to be 'hewers of wood and drawers of water' under political taskmasters forever. Why is it that our lawyers rule the nation, and fill all lucrative offices, from the presidency downwards? Simply and solely because they can do something more than read and write. If our farmers and mechanics would enter the lists with our lawyers, they must acquire the same degree of intellectual power and address. Nor would this prove a very difficult achievement. Take the common run of our lawyers—and they are no great things. The mechanics and farmers might easily beat them at their own game and with their own weapons. If they did but understand their interests, they would unite with the schoolmaster—make common cause with him, and assert their natural right and influence in society. Let them

take this matter of schools and colleges into their own hands.

- I have been pleading the cause of farmers and mechanics some ten or dozen years past. Because upon them, as enlightened, judicious, independent, patriotic citizens, depend the destinies of this republic. The question is, shall they lead or be led? Shall they arrest and put down the factious spirit of unprincipled ambition, or shall they tamely lend themselves as the instruments and the victims of its desperate and treasonable purposes? The crisis has arrived when the people must speak and act wisely and resolutely, or their ability to speak and act, with decisive efficacy will be lost forever.

The lawyers are now our sole political guide and instructors. They engross the learning of the country; I mean all that learning which is made to bear on government, legislation and public policy—for the physicians rarely intermeddle in these affairs; and the clergy ought forever to be excluded by law, if not by a high sense of duty. Our farmers and mechanics therefore, who constitute the great body of the people, are governed by the lawyers. Now it is not in human nature that in such a country as ours, there should not grow up a sort of professional aristocracy, which in time may become irresistible.—Wherever there is a privileged order, no matter how constituted, whether like the patrician of ancient or the ecclesiastical of modern Rome, it will, if not duly checked and counterbalanced, in the long run, become overbearing and tyrannical. I look to a well educated, independent yeomanry as the sheet anchor of the republic."

A. Questionable, friend Lindsley.

B. It must be conceded that graduates are presented with abundant temptation to impose upon ignorance from which they cannot be exempted but by the universal spread of knowledge.

C. Why not the *whole* people? If we have now a professional aristocracy, would it meliorate our condition to educate another privileged order, who though they might

defeat all the ambitious projects of lawyers, would render the mass subordinate to a larger class, whose rule would not be more tolerable because called by another name. The idea of training one set of men to govern the rest, even if it be under the plausible pretext of *protecting* them from the encroachments of the designing, is absurd and preposterous. Qualify every man to form correct judgements; and when there is no longer an ignorant population to impose upon, there will no longer be ambitious aspirants to impose. For lack of occasion, the habit—the desire will be lost.—Ed.

SHAPE OF THE EARTH ILLUSTRATED.—

We have likened inequalities on the earth's surface, arising from mountains, valleys, buildings, &c. to the roughness on the rind of an orange, compared with its general mass. The comparison is quite free from exaggeration. The highest mountain known does not exceed five miles in perpendicular elevation; this is only one 1600th part of the earth's diameter; consequently, on a globe of sixteen inches in diameter, such a mountain would be represented by a protuberance of not more than one hundredth part of an inch, which is about the thickness of ordinary drawing paper. Now as there is no entire continent, or even any very extensive tract of land, known, whose general elevation above the sea is any thing like half this quantity, it follows that if we would construct a correct model of our earth, with its seas, continents and mountains, on a globe sixteen inches in diameter, the whole of the land, with the exception of a few prominent points and ridges, would be comprised on it within the thickness of thin writing paper; and the highest hill would be represented by the smallest visible grains of sand.

Rain Gauge.

It has often been said in the Inciter that all knowledge must be about facts and that only those who observe the facts can

have the knowledge. In many cases those who observe the facts may tell them to others, and it may answer nearly as well as if they had observed them themselves.

Every body has taken notice that water falls in the form of rain, and some people have been at the pains to observe how much. For this purpose they have an instrument called a rain guage by which they can ascertain how much water falls at any time. The rain guage is simply a tube of equal size in its whole length placed in a suitable situation. It has a scale or rule marked with inches and parts, by which very small quantities may be measured very accurately.

The following table will show what quantity fell in the vicinity of Philadelphia in each year from 1810 until 1833.

The depth of water is measured after each shower.—Ed.

	Inches.		Inches.
1810,	82,656	1822,	28,864
1811,	34,968	1823,	41,815
1812,	39,300	1824,	38,740
1813,	35,625	1825,	29,570
1814,	43,135	1826,	35,140
1815,	34,666	1827,	38,500
1816,	27,947	1828,	37,970
1817,	36,005	1829,	41,850
1818,	30,177	1830,	45,070
1819,	23,354	1831,	43,940
1820,	39,609	1832,	39,870
1821,	32,182	1833,	48,530

Thus the whole quantity which fell in the above 24 years was 886,503 inches.

The rain in each month of the year 1833, was as follows:

	Inches.		Inches.
1st mo.	3,97	8th mo.	3,39
2d	1,24	9th	3,82
3d	2,22	10th	10,03
4th	0,70	11th	2,78
5th	4,88	12th	5,67
6th	5,28		
7th	4,15	Total,	48,85

Three Mottos.

He that will not reason is a bigot; he that cannot reason is a fool; and he that dares not reason is a slave.

Just opinions are the result of just knowledge,—just practice of just opinions.

If we cannot reconcile all opinions, let us endeavor to unite all hearts.

Saving Crumbs.

When I was a boy about twelve years of age, my father sent me on an errand to the house of a poor man. On my arrival, I found he had been shelling corn and was gathering up the few grains that lay scattered upon the ground. The curiosity and impertinence of an inquisitive boy, led me to enquire of him why he was so saving of trifles, or "stingy," as I termed it. He replied in a very mild and placid tone, that it was not stinginess but carefulness that induced him to act thus savingly. He further remarked that the philosophy of nature taught him, that saving crumbs was the way to wealth. By this honest man's plain and simple illustration of the "way to wealth," I learned my first lesson in Natural Philosophy. By "Arithmetical Analysis," he demonstrated that all bodies, however large, are made of small particles of matter. The gentleness of his deportment towards the rude inquiries of a wild, thoughtless boy, made an impression on my tender mind which time has not erased.

Sixteen years after this adventure, I was travelling in a very beautiful and flourishing part of the young, but prosperous state of Indiana. After a fatiguing ride of some hours, through a new and somewhat thinly settled part of the country, I approached a handsome farm apparently cultivated, in the midst of which was situated a neat, comfortable dwelling house and other convenient buildings, well arranged in every respect. Immediately on this discovery, I determined to alight and rest myself an hour or two. Accordingly I called at the house, and was furnished with every thing necessary to the refreshment and comfort of a weary traveller. But judge my astonishment when I recognized in the possessor of the comfortable mansion and fine farm, the very man, who, so long before, told me that the way to wealth was saving crumbs. Although I am still young, I have lived long

enough to learn, by practical example, the importance to save every little trifle.

Reciprocity of justice an innate principle of human nature.—A little boy, about three years old, who cannot speak plain, visits a neighbor's house, frequently before breakfast, for the purpose of grinding a few grains of coffee several times over, which affords him great pleasure. One morning, after having finished grinding his coffee, he was so gratified and grateful, that he generously offered to return the favor, saying to the lady, "*now you come and drind toffee to my house.*"

Aphorisms.

A child should never be indulged in any habit which he must necessarily cease from, in order to be happy.

To treat enquirers after truth as its enemies, tends to interrupt its progress, and to turn them from it.

The ladder of ambition is easier of ascent than descent.

The love of money is an opiate, that often lulls conscience asleep, and blinds the judgment.

It may afford some encouragement to a mind in distress to remember that the narrowest part of a defile is often nearest the open field.

Adversity, as a sieve, separates pretended, from real friends.

Power is more frequently coveted with a view to the correction of the faults of others, than our own.

Self-conceit is mostly blind to the merit of others, as well as to its own defects.

The Sea.

The Sea, the Sea, the Summer Sea!

No tempests o'er it sweep;
But calm as childhood's gentle rest,

The placid waters sleep.

The Nautilus in mimic pride,

The balmy breezes greet;

Lo! where it spreads its purple sail

And steers its fairy fleet!

The sunset cloud, the crescent moon,

The rock, the tower, the tree,

Mirror'd in magic beauty seem—
The Sea, the Summer Sea!

The Sea, the Sea, the Winter Sea!

When storm-clouds are abroad,
And tempests howl and billows rise.

And nature's self is awed.

The thunder rolls, the lightnings flash,

The skies in anger frown,

While 'mid the elemental strife

The shattered ship goes down.

For 'tis indeed, an awful hour

Of dread solemnity,

When Death, with shadowy footstep treads

The Sea, the Winter Sea!

Brandreth's Minstrel Melodies.

Dirge for the Year.

BY P. B. SHELLY.

Orphan hours, the year is dead.

Come and sigh, come and weep!

Merry hours, smile instead,

For the year is but asleep.

See, it smiles as it is sleeping,

Mocking your untimely weeping.

As an earthquake rocks a corse

In its coffin, in the clay,

So white Winter, that rough nurse,

Rocks the death-cold year to-day;

Solemn hours! weep aloud

For your mother in her shroud.

As the wild air stirs and sways

The tree-swung cradle of a child,

So the breath of these rude days

Rocks the year!—Be calm and mild,

Trembling hours, she will arise

With new love within her eyes.

January gray, is here,

Like a sexton by her grave,

February bears the bier,

March with grief doth howl and rave,

And April weeps—but, O ye hours,

Follow with May's sweetest flowers!

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EDITORIAL.

Mensuration.

This branch of learning is now very commonly taught in school, at considerable loss of time, without, as I think, an equivalent advantage. The reason of this is partly that the forms which the authors introduce to be measured, are not the forms we are called upon to measure in practice; and partly that the rules by which their contents are ascertained, are so complex—depend on such abstruse mathematical positions, that it is impossible for the common student to understand them.

I appeal to those who have studied Mensuration in popular authors without the needful previous preparation (Geometry, Algebra and Fluxions,) whether they understand the science? Whether the operations they performed were not merely an adherence to rules, the rationale of which they did not comprehend?

It is not uncommon for boys who have gone regularly through Mensuration to be unable to tell the value of a job of mason's, plasterer's or carpenter's work, or to tell how much surface or solidity there is in bodies which we have frequent occasion to measure. Why is this? Because they have been employed at that which they did not understand, and for which they would have no use if they did understand it, to the neglect of that which is simple and of frequent necessity.

Practical measuring, both superficial and solid is very simple, if the proper mode be pursued, which is to take actual measurements, and render the science

practical from the initiation of the student.

Let him take the dimensions of a floor, 12 feet by 15. It can be demonstrated that the length must be multiplied by the width; you have only to draw fourteen lines across the slate in one direction and eleven in the other, at right angles with them, when you can give him ocular demonstration that there are 180 squares, corresponding with the feet square in the floor. If he now measures the depth of the cellar below this floor and finds it to be 7 feet; then the superficial content of the floor multiplied by their depth will give the solid content of the cellar. To demonstrate this, take a block, draw fourteen lines the long way, eleven across and six the short way. If you draw these lines all around the block you will find that the block might be sawed into seven boards; each of these boards into twelve scantling and each scantling into fifteen blocks, making in all 1260 corresponding to the cubical feet in the cellar.

Plasterer's work is measured in the same way as flooring for the purpose of getting the superficial feet; but the plasterer divides the feet by 9 to bring them to yards square, and the carpenter divides his by 100 to bring them to squares as they are called.

The mason multiplies the length of the wall by the height and that product by the thickness; by this he gets the cubic feet in it. His work is paid for by the perch. A perch is sixteen and a half feet long, one and a half feet wide and one foot high; hence, when he has found the cubical feet of wall in a building, he divides by 24.75 which brings them to per-

ches, for so many feet there are in a perch.

We have seen that the length multiplied by the width, gives the superficial content of a body; hence the body whose length and width are each one, must have one for its superficial content or area, for 1 multiplied by 1 produces 1.

If you describe a circle inside of a square whose side is one, the circle will not contain one; there will be four corners cut off or thrown out. It has been found by nice measurement that such a circle contains .7854, or something more than three fourths of an inch square, hence if the diameter of a circle be multiplied by itself, which would give the content of a square whose side is the same as the diameter of the circle,) and that number be multiplied by .7854 it will be the area of the circle.

It seems a little strange at first that multiplying by a number as .7854 should diminish instead of increase the number by which it is multiplied; but a little reflection convinces us that it is right, for while multiplying by 2 doubles a thing and by 1 makes no change in it, so multiplying by a part of 1 must make it less than it was before.

Knowing how to find the superficial content of a circle, it is easy to find the cubical content of a cylinder or log. This is done by multiplying the superficial feet of the end by the length. If the ends of the log are not of the same size, find the content of both, add them together and take half which will be the mean or averaged content; this, multiplied by the length, will produce the cubical content, as before,

If you wish to know the convex or round surface of a log, multiply its length by the length of a string which reaches round it. This is plain, for supposing it two feet around and ten long, if you take the bark off in one piece and press it out straight, it will be just like a board ten feet long and two wide.

Geological Facts.

In the last number it is stated that there

are animal and vegetable remains in a state of petrification, in situations where the inexperienced geologist would scarcely expect to find them. I will now go a little into detail and make such references as will enable those who desire more information on the subject to satisfy themselves.

Fossil ears of corn with copper and silver in them, have been found in Switzerland and near Frankenburg in Hesse. Beds of petrified wood exist 1500 feet above the level of the sea, near Manda in Spain. The most delicate traces of the structure of flowers can be seen at Ihlefeld in Hohenstein. Some of them are indigenous; some such as only grow in distant climates. Wood changed to bitumen, with the bark and buds discernible, in some instances part of the tree in its natural woody state, and part changed to bitumen.

Shells and zoophytes are found in many parts of the world. In France they are abundant; in the environs of Paris and Rhimes vast quantities of them have been discovered, and in the neighborhood of Touraine there is a surface upwards of twenty square miles twenty feet deep of shells.

These marine productions are discovered in all parts of Europe. In Sweden they are found 300 feet above the level of the sea. They have been found on the Pyrenees more than 10,500 feet above its level, and in the Alps more than 6000. Shells are also found in the gold mines of Guinea. Mount Libanus, Carmel and Taurus are bestrewn with them. New Holland is not without them. They are found on the Allegheny mountains in North America, and on the Andes in South America, more than 13,000 feet above the sea.

Petrified fish have been found in some parts of the world. The same is true of Insects and Birds.

Quadrupeds too are found in some instances, in great numbers together in caverns where it would seem they had fled on the occurrence of some violent convulsion of nature. Skeletons of them are en-

ture, which together with the great height of the mountains in which are the caverns containing them, has led some philosophers to suppose that they sought refuge in these caverns from a tremendous swell of water, which must soon have subsided. In the same vicinity are found the skeletons of ruminating and carnivorous animals, but none of the human species.

A few general remarks may be made regarding all these fossil remains. In some instances they are similar to animal and vegetable productions now in their neighborhood; in others there is no resemblance but to such as are very remote, and several species are found which are not known to exist at all. Of the extinct tribes, among quadrupeds, may be reckoned the Mammoth, the Mastodon, the Megalonya and the Megathian—races not known even to tradition. Again, in different situations and at different depths, they are found in very different conditions, in some the bones are completely petrified; in others scarcely any approximation to petrification. These facts lead some geologists to the conclusion there have been several general or partial revolutions on the globe.

Some of the authorities referred to are Bergman's Physical Geography, Memoir of the Academy of Science, Paris; the writings of Humboldt, Cuvier, Leibnitz, Blumenbach and other authors who have been close observers and have obtained the reputation of veracious writers.

Among the organic remains found in the marl pits of Lucas Benners, Esq., in Craven county, North Carolina, are the following:

"Several pits have been dug, some of them to the depth of 25 feet below the surface of the earth, and ten feet below the present surface of the river. In the course of these excavations a great variety of interesting organic remains have been found, consisting of sea shells, bones and teeth of fishes, and the bones of land animals of prodigious size. Mr. B. mentions that the following is the order in which these remains have been found:—1st., Shark's

teeth and the fragments of bones of marine fishes mingled with sea shells. 2d. teeth, horns hoofs, ribs, vertibræ etc., of quadrupeds that inhabited the land mingled with sea shells of great variety. These remains of land animals are found at the depth of from 20 to 25 feet below the surface of the earth. Among them are recognized with certainty the teeth of the great Mastodon, the hoofs, horns, and vertebrae of an elk of great size and the teeth of an animal supposed to be the hyena.

"That was certainly a strange world in which such animals as these browsed and prowled! and it might seem scarcely compatible with the co-existence of man in his rude state, armed only with the bow and the club."

A Boarding School.

EDWIN. Well young gentleman you have come to be an inmate with us, I suppose; what branches do you intend to study?

JOSEPH. I should like to know something of mathematics and natural philosophy.

E. Why I supposed from your appearance and language that you were a quaker.

J. Admitting thy supposition to be correct, what then?

E. Why of course that you would take no interest in the acquisition of such science. I have no personal acquaintance with any members of the sect of quakers, but I have been under the impression, that they are entirely domestic, fond of accumulating money, dogmatical in their opinions, uncourtly in their manners—in a word that they are unfriendly to all pursuit which tend to liberalize the mind.

J. I incline to think that thou must be benevolent thus to notice one from whom thou couldst expect so little in return. At present I feel no objection to a further acquaintance, partly from selfish motives, and partly that if there be any thing erroneous in thy opinion of friends,

thou mayest have an opportunity of correcting, so far as thy observations on the conduct and character of one, raised to his fifteenth year in the society, may enable thee to do it.

E. I shall avail myself of the offer, and in return I will introduce you to any of our school fellows with whom you may wish to be intimate.

J. I came here to study, and shall not therefore covet an extensive acquaintance, especially with those who are not studious. I do not seek *intimacies* but with proven acquaintance—with congenial minds. I could not be very closely connected but with those who think and feel pretty much as I do.

E. You seem to throw a dash of cold water on our acquaintance at the outset, for though you may remove some of my prejudice against your sect, it is scarcely probable you will convert me to quakerism.

J. If thou art not already converted to the essentials of quakerism, I do not desire thy acquaintance; if thou means our peculiarities of dress and address, I do not wish to have thee or any other person converted to them, for I attach no importance to them myself.

E. Why then do you wear singular clothing and use singular language?

J. Partly, I believe from a sense of propriety, but more from education. In the origin of the society, I am told it was the costume of the day, and as they wished to abstain from superfluities, they did not change with the changing fashions.

Much the same may be said in relation to the singular address; I believe it was only persons who estimated themselves above unity, who required the plural address. The early friends were conscientious about acknowledging this distinction, not founded in merit, and they suffered for it.

If our singularities necessarily excite such prejudice against us as thou appearest to have, (which I do not think they do), it might be well to abandon them. That cannot be good, to my way of thinking,

which places man at distance from his fellow; it is either wrong in itself or not rightly used.

E. There is more of concession in this than I was taught to expect from one in your sect. I supposed you so tenacious of your own opinions and customs, that you would not admit the possibility of error, or weakness in either. I am glad to be corrected. Will you be so good as to inform me regarding your religion?

J. Friends say that a precept given near two thousand years since, very commonly known as the "Golden Rule," comprises in its brevity, every obligation possible to man. As thou hast very politely avoided asking me whether their practice is in conformity with the letter or the spirit of its requisitions, I volunteer thee information that my own, is not so near it as I should think best.

As to dogmas, being young, I have examined them very little. My father, who is counted a discreet man, of plain understanding, says that he believes right affections are every thing. He thinks it improbable that any two persons believe precisely alike, and that the various shades of theoretical opinion can never do harm so long as they are not known. He holds that belief is involuntary, and that it is of much more importance for men to perform their duties to beings whose happiness they can affect than that they should agree in opinion about beings whose happiness they cannot effect. What some call *belief*, he calls *knowledge*; for example, he does not *believe* about what is right for him to do, he professes to *know* it. He says he has no recollection of having acted contrary to his own clear perceptions of right, that it did not subject him to confusion and regret; nor any instance in which his actions were consonant with such clear perceptions, that peace of mind did not follow. He believes that this now is, and always has been the case with all men.

E. This is nothing but conscience.

J. My father does not dispute about names.

E. Does your father call himself a religious man with no more creed than this?

J. He sometimes speaks of the requirements of his religion.

E. I see nothing like religion in it.

J. Dost thou see any thing to disprove in it?

E. No: my objections are negative. There is not enough of it.

J. But if it brings peace to the possessor, and makes a good neighbor for the presbyterians, methodists, &c., who live near him—

E. Why then I should say it is good morality and to be deprecated on that account.

Definitions.

ASTRONOMY, is a knowledge of the heavenly bodies; of their magnitudes; their real and apparent motions.

GEOGRAPHY, is a knowledge of the surface of the earth; of the land and water of which it is composed; of the countries and places on it; its climate, productions and inhabitants.

GEOLOGY, the knowledge of the strata or layers of which the earth is composed. It considers also whether they are primitive or secondary.

MINERALOGY, a knowledge of the ingredients which make up the strata, and

CHEMISTRY, the science by which is ascertained the constituents or elementary principles forming those ingredients.

BOTANY, treats of the natural history of vegetables; of the roots, stalks, leaves, flowers and seeds of plants.

COMMERCE, is exchanging the commodities of one nation for those of another, and

NAVIGATION, is the art of guiding ships across the ocean, to carry on this exchange.

AGRICULTURE, is the art of preparing the ground, putting seed in it and collecting and preserving the crops.

ZOOLOGY is the history of animal life in general.

ZOOGRAPHY, a description of animals.

ORNITHOLOGY, the history of birds.

ENTOMOLOGY, the history of insects.

ICHTHYOLOGY, the history of fishes.

CONCHOLOGY, the history of shells.

AMPHIBIOUS, capable of living on land or in water.

CARNIVOROUS animals are such as subsist on flesh.

GRAMINIVOROUS, grass eating animals.

RUMINATING, cud chewing animals.

GREGARIOUS, living in companies.

SOLITARY, living alone.

QUADRUPED, a four-footed animal.

BIPED, an animal with two feet.

MULTIPED, having many feet.

WHOLE HOOFED, having the hoof in one piece.

CLOVEN FOOTED, the foot divided into two parts.

DIGITATED, having the hoof divided like fingers.

PALMATED, having a palm or body with fingers.

Rice.

This plant has a round, jointed stalk; its leaves are narrow and pointed, and its flowers form a kind of bunch at the extremity, resembling an ear of oats.

A wet soil and hot climate are necessary for the cultivation of this plant. The planters choose such situations as they can overflow by letting sluices of water upon the land. To ensure a good crop, it is necessary that the ground should be frequently inundated.

It is not uncommon for the reapers when harvesting, to wade to the knees, in mud and water; they have carriages to take it away as they cut it, to dry situations.

The only labor of consequence after the rice is harvested, is to free it from the husks with which every grain is enveloped. This is mostly done by beating in a mortar, though there is some variety in the machinery used. In some places to the east it is scalded, which causes the rice to swell and burst the husk.

In some of the eastern countries, rice is the chief food of the inhabitants. It is believed that the notion that eating rice impairs the sight, is without foundation.

There is but one species of this grain, though there are several modifications of it from soil and climate.

In some countries they make a fermented liquor from it which is stronger than wine.

They also distil from it an ardent called Arrac.

Cotton.

This soft vegetable down is contained in the seed vessel, and is the envelope of the seeds of the cotton plant, which is cultivated in the East and West Indies, and other hot climates.

It is an annual plant which grows to a considerable height and has leaves of a bright green color marked with brownish veins. The flowers are of a pale yellow color with red spots at the bottom.

The pods or seed vessels, are of a somewhat triangular shape, and have three cells in each.

When the plant is mature, these pods burst, and expose to view the bunch or tuft of cotton contained in them. Before the bursting of the pod, the fibres of the cotton lie very compactly, when that event takes place they separate and lie loosely. The seeds are black. It is attended with much labor and care to separate the seeds from the cotton before it is put into the hands of the manufacturer. The machine for facilitating this operation, consists simply of two small rollers revolving in opposite directions. Afterwards it is hand-picked to free it from broken seeds and other foreign matter, when it is packed up in bales of about two hundred pounds each.

The cultivators of this plant drop the seeds in squares after the manner of corn planting; the distance between the rows is commonly six or eight feet in one way, and four the other. At the end of five months the flowers appear, and in two months more, the pod is formed.

Though cotton flourishes only in hot climates, it has been cultivated with some success in the southern parts of Europe.

Great Britain imported in 1802 no less

than eighty million pounds of this article.

Ornithology.—Poultry.

Under this head are ranked birds with white flesh which are domesticated and kept for the supply of the table. Of these the species most general, and perhaps most serviceable, is the barn fowl. This bird is thought to be a native of Persia, but it would be difficult to decide upon its original home as it is found in many latitudes, with a covering suited to the climate. In Japan it is covered with hair instead of feathers. It is said that in Malabar the bones of this bird turn black while the flesh is boiling.

It is well known that chickens are hatched by the hen sitting a certain length of time on the eggs. At Grand Cairo in Egypt they hatch thousands of chickens at a time, in ovens made for that purpose. This proves that hatching is effected by the application of warmth.

The Turkey next to the barn fowl is probably most common among us. Where the Turkey came from originally is not known; some say from the East Indies, though some assert that this fowl was not heard of until after the discovery of America. Whether there were Turkeys in the Indies we cannot tell, but they are found wild in abundance in all the unsettled parts of this continent. Though this bird is dull and sluggish when tame, in its native forests it is far otherwise; it can run with the speed of a man, and fly with great velocity; the hunter must be wary to get near them. There is nothing remarkable in the tame turkey except it be the proud strutting of the male; some of them are extremely averse to red garments and will attack the person wearing them.

Peacocks come from Java and Ceylon, where there are yet flocks of them. The flesh of this bird was once considered the finest delicacy that was brought to the tables of the great, though it is now seldom eaten;—this may be on account of its scarcity.

Whoever has seen a Peacock, need not be told that the imagination cannot conceive of a more splendid display of brilliant colors. There is not probably in nature any thing more gaudy than the tail of the peacock.

The Guinea fowl is originally from Africa where they are in large flocks. The difficulty of rearing this bird, with the inferior quality of its flesh, make it less an object with the poultry men than the barnfowl. Guinea fowls are kept rather as a curiosity and to make complete the farm yard assortment, than for their utility.

The fowls just described belong to the land, and man has only to obtain their confidence by kindness, or change their nature by confinement, to make them subservient to his purposes; not so with the Goose and Duck; he has to reclaim them from an element more congenial to them than the only one in which he can live. Although these birds find a great part of their subsistence on land, in their natural state they spend a great part of their time on the water. On the surface of the limpid stream they can move proudly or rest at ease. It would be difficult to conceive of any thing more graceful than the motion of a water fowl on the bosom of the liquid element. The shape of their breasts and the smoothness of their coverings are well adapted for a passage through the water, as are the forms of their feet for propelling them.

The feathers of the water fowl are not surpassed by any thing for bedding, and the quills of the goose are indispensable in literary society. The flesh of Geese and Ducks makes it an object to rear them

Mechanical Powers.

The lever which you read about in the last number is called a lever of the first kind. Every lever whose fulcrum is between that which is to be performed and that which performs it, is of this kind.

The second kind of lever has the fulcrum at one end, the moving power at the other. That which is to be effected

comes between them. The gain in this is not so great as in the first kind; oars of boats, cutting knives which are fixed one end, and doors on their hinges, are levers of the second kind.

In the third kind of lever the fulcrum is fixed at one end, the weight or work to be done, at the other, and the power between them. To this kind may be referred some of the wheels of a clock or watch, and a man rearing up a ladder.

There are other mechanical powers, but they are all on the lever principle. One of them is the Wheel and Axle, which is simply a revolving shaft with arms attached to it. By pulling at the arms the weight is raised by a rope which winds around the shaft. Draw wells are upon the wheel and axle plan; the winch or handle is the arm. Wind mills, coffee mills and grindstones are examples. In the case of the coffee mill, power is gained and time lost—just the reverse happens with the wind mill; the wings or paddles move with much greater velocity than does the hand which propels them, but with proportionably less force. The grindstone varies in this respect; if the length of the winch be equal to half the diameter of the grindstone, neither power or time are gained or lost; if it be greater, power is gained, if less there is a gain of velocity.

The Pulley is difficult to describe and requires close examination to be understood, but it is precisely on the same principle; the length of the rope hauled in, bears the same proportion to the distance the weight is moved, that the weight bears to the moving power. This mechanical power called Block and Tackle is much used on board of ships, as it is the most convenient way of applying the lever principle in that situation.

The inclined plane and the wedge are also rated among the mechanical powers; lastly

The Screw. If there were no friction, the advantage gained by the screw would be in proportion, as its handle is longer than half the diameter of the screw pin

but a portion of the power is lost by friction, in every application of the lever principle, though most in the screw and wedge.

MOVING POWERS.

You need scarcely be reminded that the moving power in the use of these contrivances is often the strength of men. Horses, oxen, and other beasts of burden often relieve them.

The pressure of uniform weight, is applied usefully in conjunction with these contrivances, as in clocks. Watches are moved by springs.

Water power has long been used for turning machinery, and within the last thirty years, steam has come greatly into use, and is likely to be more highly valued than any propelling cause that has yet been discovered.

It might be well for you to examine a little into the nature of steam, that you may have an idea whence it derives its force. You may observe when a tea kettle is boiling, that a current of steam passes off swiftly from the spout. If the spout were very small and the lid very tight, this current would be still more rapid. If the spout were closed and the lid confined, the kettle would burst.

It appears that heat separates the little particles of which water is composed. This is steam; it is elastic or springy, that is, it may be confined in less space than it would occupy if left free. The more closely it is confined, the greater will be the force with which it passes off at every opening made for its escape; of this the steam workers avail themselves; it is by the expansive power of steam that they propel their machinery. Imagine how a stopper would be forced out of the spout of a boiling tea kettle, if the lid were held tightly on, and you will have a first idea of the motion obtained by the expansive power of steam. An engine could not be so described as to be useful to you.

Salts.

You have already read of the simple elements and of the laws by which they unite

with each other to form compound bodies; you have also learned that one class of these compound bodies is denominated acids.

You are now to be informed that the acids again unite with the earths, alkalies, and metallic oxides, and form a very numerous class of substances called salts. With the names, appearances and uses of some of these you are acquainted, though not with their composition. You know alum, table salt and copperas. These are each formed by the combination of an acid with another substance. That with which an acid unites to form a salt, is called the base of that salt. Alum is formed of alumine as a base, and sulphuric acid. Table salt has soda for its base, which is combined with muriatic acid. In copperas iron rust is the base and the sulphuric is the acid which is connected with it.

The names of many of the compound bodies, of the oxides, acids and salts, were given to them before their composition was known. They were sometimes named after the person who discovered or brought them into use; sometimes after the place where they were found; sometimes they were named from their resemblance to something with which men were previously acquainted.

When chemistry became a science, it was observed that there was a great number of compound bodies and they thought it would be best to devise a systematic way of naming them, so that the sound of the name should lead the mind to a knowledge of the constituents. As rusting was caused by the action of oxygen on a metal, they agreed to call all rusts oxides and then by fixing to the word oxide, the name of the metal, even those who were but slightly acquainted with these matters, would have a pretty good idea of the thing, from the name; hence oxide of iron, oxide of copper, &c. The same simple mode of classification was used with the acids and the salts. This was called the new nomenclature, (new way of naming) and makes the study of chemistry much

easier for learners; for if they know the names of all the simple elements, they may know the constituents of an oxide whenever they hear it named. The same is the case with the acids; and if they know the names of all the acids as well as those of the simple elements, when they hear the name of a salt they may know what it is made of, even though they never saw it.

You learned in our last number, under the head of chemical attraction that the names of the weak acids ended with *ous*, and the strong ones with *ic*, as sulphureous (weak,) sulphuric, (strong;) nitrous (weak,) nitric (strong;) &c. It will be proper for you to bear in mind that a salt formed from a weak acid ends in *ite*, if it be formed from a strong one it ends in *ate*. Sulphureous acid and potash form a sulphite of potash, while sulphuric acid and potash form a sulphate of potash. Nitrous acid forms nitrites. Nitric acid forms nitrates.

There are between thirty and forty known acids; suppose them each to have the weak and strong state; suppose there are fifty elementary principles, and that they each unite with every weak and every strong acid; this would make upwards of eighty thousand compound bodies, which it would be impossible to remember if they were not named on some system of classification, yet by the chemical nomenclature there would be little more than a hundred names to remember; to know the composition of every one as soon as its name is pronounced. All the elementary bodies do not acidify, nor do they all unite with acids, still the salts are numerous.

When the base of the salt and the acid are united in one proportion it is called a *neutral* salt, meaning that they are reciprocally saturated with each other; all their characteristic properties are neutralized or destroyed. When there is a redundancy of the acid, it is called a *super* salt, and if the base predominates it is a *sub* salt.

I do not know how to lead you to an acquaintance with the salts, better than by

making out a table of some of these known to you.

Suppose a hundred parts of salt, say a hundred grains or pounds, then its composition will be known by ascertaining how many of those parts are base, how many acid and how many water.

Practical chemists have made many experiments to come at the exact proportions, and the results have been pretty nearly alike in several of the salts.

	Base Acid Water		
Sub. Carbonate of			
Potash (pearlash.)	61	30	6
Carb. soda (soda.)	21.5	14.5	64
Car. lime (limestone)	55	45	
Car. magnesia (mag.)	45	34	21
Sulphate soda (g. salt)	18.5	25.5	58
Sul. lime (plast. paris)	32	46	22
Sul. magnesia (e. salt)	17	29.5	58.5
Nitrate potash (s. petre)	51.5	44	4.5
Muriate soda (table salt)	53	47	

The foregoing may serve to give you an idea of the composition of salts.

This class of bodies is generally crystallized, and though different bases and acids form crystals of different shapes, yet a salt formed from the same base and acid, in the same proportions, always assumes the same crystalline form; and it is by this uniform crystallization, that many of them are known to the experienced eye, at sight. Some of them attract moisture from the atmosphere and become partly liquid; those are called *deliquescent*; others give off part of their water of crystallization to the atmosphere, and fall into powder; these are denominated *efflorescent*.

COMMUNICATIONS.

This is the last article our readers may expect on the subject of Botany. Those of them who have a taste for the science, but who have not made it their study, will, I doubt not, feel due obligation to the writer of the articles, for the natural way in which she has introduced them to it, as

well as for her plain definitions. The series is finished just before the season of the flowers; I advise you to turn the teaching to practical account,—examine the spring flowers; class and order them by the system which you find in the essays. Try if you cannot apply all you have read before the season is over, and try too, to be as amiable as the authoress of the articles.—Ed.

Botany.

In my last I gave you a partial description of the different forms of leaves. I might continue the description throughout the other organs, such as the calyx, corolla, &c., of which there are also many varieties. But I should here find it still more difficult to what particular kind each name belonged, and to give you names to which you could attach no meaning or application, would be burdening your memory to very little advantage. We will therefore for the present confine ourselves to the consideration of the uses of some of these organs.

The leaves of plants may be compared to the lungs of animals, as they inhale such gasses as are necessary for the growth of the plant; the most abundant of these gasses is carbonic acid gas; it is decomposed, the carbon becomes incorporated with the plant and the oxygen, the other constituent of carbonic acid, is exhaled, or passes off by the same organ, so that the leaves may with great propriety be termed the organs of respiration, as they both inhale and exhale air or gasses. The power of respiration seems to be confined to the upper surface of the leaf, while that of the under side seems better adapted to the absorption of moisture. Water sprinkled upon plants on a dry, hot day, will be seen to revive them almost instantaneously, but it has been observed that while the upper surface of the leaves float upon water the flower will wither; while those placed with their under surfaces in contact with it, will retain their freshness. You may easily see a difference in the appearance of the two sides, should you examine them;

one is adapted to respiration, the other to absorption.

The uses which botanists attribute to the corolla, is to preserve the pistil and stamen from the injury of rain and moisture; in many cases they fold up during rain, thereby completely sheltering them.

There are, however some which are destitute of this organ—these are called apetalous, which means without petals or flower leaves; those which have the corolla composed of but one leaf are called mon-apetalous, meaning one petal; those which have many petals are called poly-apetalous.

The most important of the organs of reproduction, are the stamens and pistil. Both the calyx and the corolla may be wanting, but the stamens and pistils are both indispensable to the perfection of the seeds. On the stigma or top of the pistil you may observe a glutinous substance, the pollen dust falls upon this and adheres to it, the moisture causes it to swell and explode, upon which it discharges an oily substance which is absorbed by the stigma and passes through numerous pores to the germ, where the seeds are already formed, but require the agency of the pollen to render them capable of reproducing the species; this has been proven in various ways. Before the use of the stamens was discovered, it was not uncommon for gardeners to endeavor to increase the produce of their vines by removing all staminated blossoms, which they considered only as encumbrances; they soon discovered however, that by this means they had no fruit.

The pollen dust is conveyed to the pistil in different ways; when they are both upon the same flower, the pollen dust very readily comes in contact with the pistil, when they are in separate flowers or upon separate plants, it is conveyed either by insects flying from one to the other, or wafted by the wind. That the pollen is thus conveyed even to great distances may be seen by the following extract.

"In places about forty miles distant from two palm trees, the one without stamens, the other without pistils; and in process

of time they grew so tall as to tower above all the objects near them. The wind thus meeting with no obstruction, wafted the pollen to the pistillated flowers, which, to the astonishment of all began to produce fruit."

Two Essays and three Characters.

The two following articles are placed under the head of communications, because, though they were written before the Inciter had existence, they were written for me. They are now selected from a score or more of chemical essays penned some years since by members of a chemical class which I had the pleasure of meeting two evenings in each week. The number was about twenty, male and female, between the ages of ten and twenty years.

The first article is selected partly because I think it intrinsically good, and partly as a tribute of respect due from me to the most severely and successfully studious pupil I ever had. It can neither excite the vanity nor offend the delicacy of my pupil, that I publish this little memento of his singular application; several years having elapsed since his removal beyond the reach of injury from praise or censure. What he would have been, is beyond the reach of human prescience to tell; that George W. Diffenbach was an extraordinary boy, I feel no hesitation in saying for the encouragement of others, for his acquirements were mainly attributable to his intellectual industry. He died early in his fourteenth year. Peace to his memory.

The second article is from the youngest member of the class. As he still lives nothing will be said of him or the article, except that I suspect his imagination has since the essay was written, grown faster than his judgement.

In the next number our readers will be presented with one more article from the same record of chemical essays; and let them assure themselves that were they acquainted with the gentle girl who wrote it, they would love her. She is too far off to hear this due praise; but if she were at my

elbow it would not affect her injuriously—humility is one of her virtues.—Ed.

On the Composition of Vegetables.

Vegetables are the most simple class of organized bodies; they are composed of oxygen, hydrogen and carbon. These separate and combine in a variety of ways and form a variety of juices and acids which exist ready made, and may be considered as their immediate materials. They are sap, mucilage, sugar, fecula, fixed oil, volatile oil, camphor, resins, gum resins, balsams, caoutchouc, extractive coloring matter, tannin, woody fibre, vegetable acids &c. These ingredients are not all contained in one plant, but they are contained in the vegetable kingdom. They are found in vegetables combined with each other, and are regulated by the laws of chemical attraction.

When one plant dies, it rots and becomes the nourishment of living vegetables. Vegetables are susceptible of two kinds of analysis; first that which separates them into their common materials, such as sap, mucilage, &c., second that which decomposes them into their primitive elements, such as carbon, oxygen and hydrogen. Sap is the principal material of vegetables; it contains all the other materials that are fit for the nourishment of the plant. The basis of this juice is water. Mucilage is the thick juice that runs from cherry trees before it is dried. Sugar is found in all plants but most abundant in sugar cane and sugar maple; it is found combined with sap, gum and other ingredients. There is a kind of sugar called manna, which is given out from various trees in hot climates like gum. Fecula comprises all that which makes the flower, and is contained in the seed which when moistened and heated swells and decomposes; it is then that it feeds the germ till it reaches the top of the ground, the plant is then supplied with water from the root and takes in carbonic acid from the atmosphere. Gluten is contained in the fecula of wheat, and in no other plant; it is of a ropy, elastic nature, and for that reason wheat flour makes better paste

than any other. The vegetable oils consist of hydrogen and carbon in various proportions. There are two kinds of vegetable oils, fixed and volatile; the fixed oil is obtained only from the seeds of plants. The principal difference between fixed and volatile oils is, that fixed oils are decomposed by heat, the others are merely volatilized by it. Volatile oils are such as are distilled from peppermint, sassafras and others. Camphor is obtained from the camphor tree and from other aromatic plants and it is deposited by some of the volatile oils; as it runs out of the trees it is concentered in the same manner as gum. Resins are volatile oils that have been acted upon by oxygen, they can only be dissolved in oils or in alcohol. Pitch, tar and turpentine are the most common resins. Gum resins are resins combined with mucilage. Balsams consist of resinous juices combined with benzoic acid. Caoutchouc is a white milky glutinous fluid which acquires consistency and blackness in drying; in this state it is called gum elastic. It is obtained from trees in the East Indies and South America. The extractive coloring matters of plants are such as are derived from the vegetable kingdom; they are used sometimes for painting and dying. These colors are all called lakes and they are less durable than the mineral colors. Tannin is of great importance in the arts; it is obtained from the bark of trees, and is used in converting skins into leather and renders them insoluble in water. Woody fibre is the hardest part of the plant; it is derived chiefly from wood, but is also contained more or less in every solid part of the plant. It consists chiefly of carbon united with a small portion of the salts and other ingredients common to all vegetables. The vegetable acids are all uniformly composed of hydrogen and carbon, and their difference consists only in the various proportions of oxygen they contain.

GEORGE W. DIFFENBACH.

On the Nourishment of Plants.

Vegetables receive their chief nourish-

ment from the atmosphere and from water, yet it is evident they receive some from the earth, as it is found upon combustion that they contain earthy matter. A plant does not thrive as well in a vessel of water having free access to the air, but all the difference there would be between this and one growing on land is that the one in the vessel would be sickly and delicate. Plants take in carbonic acid gas, decompose it, set the oxygen free, and by a set of organs that they are supposed to contain, separate the oxygen from the carbon, and at the same time deposite the carbon in different parts of the plant. They also draw in water by the roots, and by the same or another set of organs, set the oxygen at liberty, or at least that part which is not essential to the formation of the plant. The hydrogen is deposited as the carbon is. Plants are composed of hydrogen, carbon, oxygen, salts and earths, the two former in particular. Neither of them are found uncombined in water nor in the atmosphere, and hence there is a proof that plants have the power of separating them. Vegetables inspire or take in carbonic acid gas at the under side of the leaves. A proof that carbon is taken in only from the atmosphere, is, that it can be found no where but at the bottom of coal pits or some other places where vegetables have been burnt, and then it is not soluble in water, and therefore cannot enter into the composition of the plant. It is most probable that carbonic acid gas is formed under ground, but it is supposed to be so light that it rises to the top before the roots can take it in. It may be recollected that water cannot absorb carbonic acid gas.

F. F.

SELECTIONS.

Is Public Education best conducted in Boarding Schools or in Day Schools?—

In examining this very important question, on the decision of which, the whole system of education depends, let us bear in mind, that, in America, education ought to

be *equal* and *republican*; and further, it ought to be—not good enough for the common people—but the best which national wisdom can devise.

If state schools are to be, as now in New England, common day schools only, we do not see how either of these requisitions are to be fulfilled. In republican schools, there must be no temptation to the growth of aristocratical prejudices. The pupils must learn to consider themselves as fellow citizens, as equals. Respect ought to be paid, and will always be paid, to virtue and to talent; but it ought not to be paid to riches, or withheld from poverty. Yet, if the children from these state schools are to go every evening, the one to his wealthy parent's drawing room, and the other to its poor father's or widowed mother's cabin, will they return next day as friends and equals? He knows little of human nature who thinks they will.

Again, if it is to be left to the parents' taste and pecuniary means to clothe their children as they please and as they can, the one in braided broadcloth and velvet cap, and the other in threadbare homespun,—will they then meet as friends and equals? Will there be no envy on the one side and disdain on the other? And are envy and disdain proper and virtuous feelings in young republicans? Yet, if state schools be day schools only, how can there be uniformity of dress? Must not the poor widow dress her children as she can?

But again: is that education *the best*, which teaches children the common branches of education during six or seven hours each day, and then leaves them to all the bad habits which children suffered to run wild will acquire? Here in the city for instance, is that education the best, by which children spend five or six hours out of the twenty-four in the streets, learning rudeness, impertinent manners, vulgar language, and vicious habits? Will any advantages in school compensate for these advantages out of it? But let us remember, it is not the question whether this

half training, (too often much less than half) is good enough for the common people. It is the question whether it is *the best* that can be devised.

For our own parts we understand education to mean, every thing which influences, directly or indirectly, the child's character. To see his companions smoke cigars is a part of his education; to hear oaths is a part of his education; to see and laugh at drunken men in the street is a part of his education; to witness vulgar merriment is a part of his education. And if any one thinks that an education like this (which is daily obtained in the streets of our city) will be counteracted by a half a dozen hours daily schooling, we are not of his opinion. We had almost as soon have a child of ours raised among the Indians, as have him frequent a common day school one half the day, and wander about our streets the other half.

But even if none of these reasons existed, how is a poor laborer or a poor widow, to keep her children at a day schools, until they have received an education equal to that of their richer neighbors? Can the laborer or the widow afford to support their children until they are fourteen, sixteen years old, while they peruse the page of science, and obtain the acquirements and accomplishments which form the enlightened, well educated man! Even if no children's tax be levied on them, can they furnish food and decent clothing during the necessary term? And if they cannot clothe their children as well as their neighbors clothe theirs, will they send them to school to be looked down upon or laughed at? If day schools alone are provided, therefore, would not these very children who most require instruction, be virtually excluded?

Is not the development of the social habits, of the dispositions, of the moral feelings, the most important of the teacher's duties? And what opportunity is there of fulfilling that duty, unless the pupils are at all times under his eye and his control?

One other strong objection to day schools

remains. If agriculture is to form a part of the instruction of all children, it must be taught in seminaries in the country, where the pupil is boarded and lodged, as well as received during class hours. We conceive that agriculture ought to form a prominent part of the education of every young republican; both, because it is the most necessary and useful of all occupations, and thus affords an independence in the worst reverse of fortune; and also because, if practically taught in the schools, it will supply a considerable portion of the expense. The pupils may raise their own vegetables, corn, and grain; and these ought to form three fourth's, at least, of their food.

We conceive, then, that state schools, to be republican, efficient, and acceptable to all, must receive the children, not for six hours a day, but altogether; must feed them, clothe them, lodge them; must direct, not their studies only, but their occupations and amusements; must care for them until their education is completed, and then only abandon them to the world, as useful, intelligent, virtuous citizens.

We do not consider this question regarding day schools and boarding schools as a non-essential, a matter that may be decided either way without ruin to the cause. We conceive that on this depends, in a manner, *every thing*. On its decision depends whether the system of education which the people call for, shall be a paltry, palliative or an efficient cure; whether aristocracy shall be perpetuated or destroyed; whether the poor man's child shall be educated or not; whether the next generation shall be educated or not.

We know that this article will startle some timid spirits, who cannot conceive how the nation would resolve to incur the expense of such a system. And we think it not unlikely that if the people decide, as we are satisfied they will, for such a system at once, its adoption may be somewhat retarded. But it is better—ininitely better, that it should be somewhat delayed, than that it should be frittered a-

way, by half measures, into nothing worth having.

Are agriculture and trades fit branches of Education in Public Schools?—We have stated that we thought a system of public education which should go no further than the day schools in New England, both un-republican and utterly inefficient; un-republican, because children, to lose the follies of aristocratical pretension on the one hand, and the abject submission of poverty on the other, must be clothed, fed, lodged and treated alike; and inefficient, because half a dozen hours' daily schooling will not train a child to be a virtuous, high minded, cultivated republican, more especially if that schooling be discontinued at eleven or twelve years of age, from the necessities of the parents.

We now proceed to enquire, whether, in public schools, children ought to be taught something more than abstract science and *book learning*, as it is popularly called: whether practice and theory ought to be united, and whether children, even while their literary and scientific education is most carefully superintended, may not contribute towards their own support for the present while they learn some trade or occupation, that shall render them independent for the future.

We are decidedly of opinion, that unless this be done, the system will be very incomplete and very unnecessarily expensive.

We of republican America, have hitherto, in education as in many other things, followed the example of aristocratical Europe. We have learnt, indeed, that we can do without a king, but we have not learnt that we can do without an idle, privileged class, to consume the producers surplus. We still assert (in practice if not in words) that "they who think must govern those who toil." We have discovered that a plain citizen does very well for a president, and that we may dispense with an hereditary succession and with court etiquette, without producing anarchy or revolutionary horrors. But we

have yet to learn, that the same man may labor and think; the same man may be producer and consumer; the same man may be mechanic and legislator, practical farmer and president. We have yet to learn that the world can go on without two classes, one to ride and the other to be ridden; the one to roll in the luxuries of life, the other to struggle with its hardships. We have yet to learn how to amalgamate these classes; to make of men not fractions of human beings, sometimes mere producing machines, sometimes mere consuming drones, but integral republicans, at once the creators and employers of riches, at once masters and servants, governors and governed.

How can this most desirable and most republican amalgamation take place? By uniting theory to practice which have too long been kept separate. By combining mechanical and agricultural with literary and scientific instruction. By making every scholar a workman, and every workman a scholar. By associating cultivation and utility, the productive arts and the abstract sciences.

Such a change would be, in every respect, most beneficial. The roughness and ignorance of the mere laborer would be removed, the pedantry and pretension of the mere scholar rubbed off. The one would not be oppressed by toil, nor the other rendered dyspeptic by continued sedentary employment. The mind would not be cultivated at the expense of the body; nor the body worn down, to the injury and neglect of the mind. There would be but one class—that of human beings; occupied as human beings ought to be, alternately in physical labor and in mental culture.

Let us not say that such an amalgamation is impossible: That would be to declare that practical republicanism is impossible. In Europe it was thought impossible for the chief magistrate of a nation (there called a king) to maintain his authority, or make it respectable in the eyes of other nations, except by entrenching himself behind ridiculous court forms, and stiff feu-

dal etiquette. But Jefferson broke the spell. He rode unattended to the hotels of the foreign ambassadors, fastened his horse at the door, transacted the business of the nation as any private individual would do the business of his family, and left the astonished representatives of royalty in equal admiration of the dignity and courtesy of the man, and wonder at the republican simplicity of the citizen.

Every man and woman ought to be able, when necessity requires, to support himself or herself by the labor of their hands. It does not follow that all must, at all times, so support themselves; but all should be able to do it. The most highflying aristocrat, if he have but prudence and foresight, will desire for his children this safeguard against want; for who is secure against a reverse of fortune?

Such a safeguard is afforded, if *all* children are taught agriculture or gardening, and, in addition, some one useful trade or occupation. And, by so useful and republican an addition to the useful branches of education, the expense might be essentially diminished. The labor of the pupils would go towards their support; and thus even while qualifying themselves to be useful to their country hereafter, they would lighten the public tax for education in the mean time.

This is not an untried scheme. It has been tried in Europe; at Mr. Fellenberg's institution, for instance, at Hofwyl in Switzerland, an establishment which is spoken of in the highest terms of approbation by those who have visited it.*

We conceive, then, that an education is but half an education, and scarcely that unless it makes its pupils productive members of society as well as well taught school boys; useful, independent citizens, as well as accomplished scholars. And we conceive that the fact that an education, thus complete, is much less expensive to the state than a mere fractional, inefficient one, is a strong additional reason why it it should be preferred and adopted.

*It yields good fruits, I know from personal knowledge of some of its pupils.—Ed

The Youngest One.

BY MRS. C. GILMAN.

I saw a mother with her child,
And each with each appear'd beguill'd;
So tenderly they spake and smil'd,

I knew it was her youngest one.

Shè lean'd upon her mother's knee,
With look half tender, and half free,
And oh, by that sweet liberty,

I knew it was her youngest one.

A whisper came with love o'erfraught,
Soon was return'd the whisper'd thought,
As tho' in this wide world were nought,

But she, and her dear youngest one.

"Mother," she said, "you must not go,
And leave your little girl, you know,
Because no other loves you so,

Like me, your darling youngest one.

Father is often call'd away,
And sisters with their playmates stray,
And I beside you always stay,

You must not leave your youngest one."

I heard a promise and a kiss,
I saw a smile of trusting bliss,
Oh nought can sever, after this,
The mother and her youngest one.

Lines.

WRITTEN AS BY MY LITTLE PUPIL, NORA.

My little heart is very gay,
I'm very happy all the day,
I see the sun send down his light,
And make the fields and flowers look bright.
I see the pretty clear blue sky,
I sit and see the white clouds fly;
I hear the little singing birds
That almost seem to lisp sweet words;
I see their snug and pretty nest,
And think I never could have guess'd
That with their little bills and feet
They could have made a thing so neat.
The pretty butterfly I see
Fluttering from flower to shrub or tree,
And think its velvet painted wings
Are prettier far than robes of kings.
I see the fresh and smooth green grass,
And pebbled brook as clear as glass;

I see the pretty lambskins play,
I smell the fragrant new mown hay.
Gay flowers and tempting fruits I see
That seem, I think, put there for me.
What though it is not always light,
I see the moon and stars at night;
What though it is not always fair,
I see, perchance, a rainbow there,
Of such bright colors, that the rain
I almost wish would come again.
These things and many more I see
That fill my little heart with glee;
For how could any child be sad,
With all these things to make her glad?

A. C. O.

The Grasshopper and Cricket.

BY JOHN KEATS.

The poetry of earth is never dead!

When all the birds are faint with the hot
sun

And hide in cooling trees a voice will run
From hedge to hedge about the new-mown
mead;

That is the Grasshopper's;—he takes the
lead

In summer luxury;—he has never done
With his delights; for when tired out
with fun

He rests at ease beneath some pleasant
weed.

The poetry of earth is ceasing never!—

On a lone winter evening when the frost
Has wrought a silence, from the stove
there shrills

The Cricket's song, in warmth increasing
ever,

And seems to one, in drowsiness halflost,
The Grasshopper's among some grassy hills.

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THE INCITER.

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Surround us favourably for acquiring knowledge; dispense with unnatural classification; remove the causes which prevent us from loving as brothers; and we will begin A NEW ERA IN SOCIETY.—*Rising Generation.*

VOL. I.

MAY 1834.

No. 12.

EDITORIAL.

Children's Reasoning.

A. I hear the people talking so much about Masonry and Antimasonry, what does it mean?

B. Masonry means what the good and wise men do when they meet in the house they call the lodge; I do not know what antimasonry is, only that the antimasons do what they can to put the masons down.

A. I am worse off than ever for our cousin C told me the other day that all masons were bad men, that they swear dreadful oaths, and that they go to the lodge and keep some to watch while the rest are contriving how to get all the offices and do wrong to those who are not masons; I do not know which to believe; but here comes cousin C.

Cousin you know you told me how bad the masons are, and what a good thing it is that the antimasons are shewing people how bad they are.

C. Yes, I remember; what of it?

A. Why brother has just been telling me what good men the masons are.

C. Cousin B has never read what terrible oaths they have to take before they can be masons—enough to make one's hair stand up almost; how they swear to keep each others' secrets, help each other to offices, and screen each other from punishment when they do wicked things.

B. The antimasons say that I know, but they say any thing that suits them. How do they know what the masons do? Do the masons let them into the lodge?

C. No: If one were to get in, I suppose he would not get out alive;—but a good many that were masons have left

them and joined the antimasons; they can tell what goes on in a lodge.

B. I guess those who have left the masons and joined the antimasons have their own reasons for it which they would not tell every body.

C. I guess those who remain among the masons have their reasons for it too, and you will not deny that they keep their own secrets pretty well.

B. We had better not talk any more about it if you cannot keep good temper; I did not intend to hurt your feelings or make you angry.

C. I confess I was hurt or it may be angry, when you said that those who had left the masons and joined the antimasons, had their reasons for it; I think you know my father too well to believe he would have reasons for any thing which he would be ashamed or afraid to tell at all times.

B. You are right my dear cousin, I do not think uncle would be satisfied to do any thing which he would be afraid or ashamed to have examined, but I have no doubt, much as I love him, that he sometimes does things with less examination, that is, with less thinking beforehand, than he does others; I do not say however that he has done so with masonry and antimasonry.

C. To be sure father does some things in haste which he sees afterwards, were improper, but then he says so, and shows he is in earnest, for he does not do the same things at another time; this is not the case in that which we are talking about, for he quit the masons ten years ago, mother says, and I know he has been an antimasoon these two years.

B. You mean I suppose that he has voted the same ticket, but surely it would be more creditable to him and nearer the truth to suppose that he did so because he thought their candidates were the best men rather than because they were chosen by that party; and I doubt very much whether he voted the whole ticket; but whether he voted the whole or a part, it was the same which father voted, for on the last election day they were together at our desk; where they had both kinds of tickets, and I believe they took names out of both, for father looking first at one and then at the other, wrote about as many names as there were on one ticket, on a slip of paper; they both looked at it, and I very well remember they both said it would do; uncle then took up the pen and on another slip of paper wrote a copy of it, at least he looked at it several times while he was writing. They then each took up one, and folding it like tickets are folded, they went to the election; this was late in the afternoon, and they were back at our house for tea.

C. Are you sure cousin that uncle voted part of the antimasonic ticket.

B. I cannot say that I am sure he did; I saw and heard what I have just told you, and I think if you had been there, you would not have doubted that they voted the same ticket.

C. I thought masons dare not vote the antimasonic ticket, or any part of it, and that if they durst they would not.

B. If there were any thing in their laws to prevent it, uncle could not vote the antimasonic ticket, for you know the masons have not expelled him, nor has he renounced them.

C. If that is true what makes my father an antimason? I am sure my mother thinks he left the masons long ago; do you think he has deceived her?

B. Oh no; I have heard that uncle has not been to the lodge for many years.

C. And is now staying away, proof enough that he thinks masonry bad, even if he says nothing against it?

B. I think not.

C. If he was a mason, why would he not go if he does not think it bad?

B. He may think, as many masons do, that attendance on the lodge will be no use to him, and he may like to spend his time where it is more profitable and more agreeable; but all this may be known without thinking masonry wicked or bad; he may, like some other masons, think that though it might have been useful once, it is not now because men have changed since then.

C. If my father stays from the lodge for such reasons why does your father go there?

B. Because he is not of the same opinion I suppose.

C. Why surely father has told him all these reasons; they talk a great deal together; like each other and are brothers-in-law; I wonder why father don't go to the lodge or uncle stay away.

B. You might as well wonder why my father don't take coffee in the evening because your father does; or uncle drink tea to keep father's company; but they both have too much sense to wish a change in the tastes or their opinions about any such things; as it is for other reasons that they like each other, it would have to be for other reasons that they would disagree; I will ask father if he thinks it wrong for uncle to stay from the lodge, and you may ask uncle if he thinks it wrong for father to go; I do not doubt but they will both give the same answer.

A. Since you have been talking I have thought of something that I am almost afraid to tell; I can't help but think it must be silly or wrong else, one of you would have spoken of it, and yet it looks likely to be so.

B. & C. What is it? Though you are the youngest you may think of something we never thought of.

A. All father's brothers are masons and none of uncle's are; this may be a good deal, for most people try to please their brothers.

B. Well done my little fellow, you

have beaten us both, and though I am satisfied that neither of our parents would do wrong if they knew it, and though they are both independent, thinking men, yet there is no knowing how much either of them is influenced by his family.

A. I am glad we talked on this subject for I am well satisfied now that a man may be a mason or an antimason and be a good man, for since we have been together, I have thought of several of both; and at the same time I have thought of so many bad men among both, that I am convinced neither masonry nor antimasonry makes men good, something else must do that.

The Lap Dog.

More than two years ago it was my fortune to journey from New York to Philadelphia with a Spaniard from the island of Cuba. He had along with him a white lap dog, that I suppose did not weigh more than two or three pounds. I observed that he was particularly careful of the little animal, for he always held it by a string tied round its neck, whether in the stage or on the steam boat. This manifestation of care on his part, called forth some passing remarks from myself and fellow passengers, which induced the Spaniard to give the following sketch of the little creature's history.

He was the property of a lady in Cuba, with whom he was so great a favorite, that she kept a slave, for whom she had paid six hundred dollars, for the sole purpose of washing, combing and nursing this diminutive specimen of the canine race.

I felt too indignant to be minute in my enquiries after the character of the owner; I knew, and could not help but know, that she was wealthy and that she was a thoughtless trifler. The little dog was destined as a present to a friend of hers in Philadelphia, who has probably had him well provided for, if it were only for the sake of the giver. What become of the slave I did not learn, but I little suspect

that he was transplanted into a free state, as was his charge. It would not be so delightful to one kind of sensibility, to restore to a man, his rights, as to present to a dear friend, a dear little lap dog.

My mind was so much engaged with the reflections forced upon it on this occasion, that I missed my dinner by writing when I should have been eating. It did not require a moment's thought to determine that the owner of the dog did not procure either him or his groom with an equivalent of her own personal exertions. People never buy lap dogs or slaves with the proceeds of their own labor. I could not but commiserate her, so surrounded that simple justice was not an integrant of her moral scheme, or independence any part of her possession; hence that she could not know the pleasure of being just and independent.

The mind once engaged in moralizing, will embrace more than one case, and I could not avoid the conclusion that our own social arrangements are based on principles exceedingly adverse to the kinds of enjoyment just adverted to. As we sped swiftly in the rail road cars, I conjectured that very few of those who performed the labor would enjoy the luxury of a ride on the work of their own hands. One class of men make them for the use of another class. Had it not been my lot to be engaged in a lighter and more profitable avocation than manual labor, I should never have heard the history of the dog, nor penned this article.

Condition of the Sexes.

GEORGE.—Well Susan I have been thinking of the conversation we had some time ago; the more I think of it the better I am pleased with some of your remarks, and the more I am surprized at others.

SUSAN.—You think me inconsistent, then, and I may presume that you have reflected sufficiently on the subject of our late conversation, to point out what you conceive to be my errors. I believe I am in a disposition to profit by your correction.

G. I do indeed, think you inconsistent. You claim equal intellectual capacity for females and you ask for them equal rights; the more I think of these two positions, the better I like them. You go beyond this; you acknowledge they do not contribute more than their share to the procurement of the comfort and the necessities of life, which share you confess is not withheld from them at table or toilet; you grant that equal cost is bestowed on their education, and still you complain that they have not their rights.

S. I would ask you whether the prices paid for female labor, will procure them equal access with the men to the table and toilet?

G. No, they will not, but this is of no consequence. Take our own family as an example; it matters not at what relative value your services and mine are rated or whether they are rated at all, you attend to the duties assigned you, I to mine, and we participate in the result of our joint exertions without any regard to the different values of the services rendered.

S. I have had many proofs of your affection, my dear brother, and cannot for a moment doubt your willingness that I should share equally in the comforts to which I have so unequally contributed, but do you not perceive that it makes me dependant on you? Let us suppose for a moment that your affection should cease, how would the case stand then?

G. We may conjure up frightful pictures of any thing, but I think it unwise to employ time thus. If we cannot rely on the best feelings of our hearts to bind us together, I know not in what we may confide.

S. Nor I either; but I do not conceive it necessary that conditions should be unequal for these feelings to operate; on the contrary, I should most confidently look to equality of condition for their perfection. There might not be so much benevolence, the fruit of commiseration for an inferior or helpless condition, on the one hand, or on the other, so much gratitude,

originating in a sense of dependence; less benevolence and less gratitude I doubt not there would be; but then I trust their places would be well supplied by a mutual sense of justice which must necessarily pervade every breast where there is feeling of equality.

But admitting for the argument that I am no sufferer from my dependance on you, so long as we are inmates, how will it be when we are separated?

G. Probably you will place yourself under the protection of another of our sex.

S. I suppose you mean a husband; the time has not arrived for me to think of that subject, but would it be pleasant for you to think that I shall hereafter become as dependant on some stranger as I now am on you, especially if you should distrust that stranger's principles, or doubt the permanency of his attachment to me?

G. It would not; but if you should incline to change your condition you will exert all your faculties of judgement; it is an affair of such moment as to require the greatest discretion; it should never be gone into, whatever may be its promises, but where it has the sanction of prudence.

S. And is it to that sex which gets little more than an ornamental education—whom custom forbids to be in those scenes of life where the true character of beings is developed, (its business scenes,)—who see the men with whom it is proposed they shall unite themselves, only in the gay party or the private sitting room,—is it to beings thus qualified, and with such facilities, that you look for a discreet judgement in the momentous matter of selecting a partner for life?

G. My dear sister do you not permit yourself to become unduly excited?

S. Quite possible indeed, but that should not prevent you from a strict examination of the social system; if you should decide that females have their rights secured to them well; if you decide otherwise well; but I advise you to be careful that you ascertain with precision, what

part of their privileges are derived from law, what from custom, and particularly what from affection, from their estimated inferiority, and from gallantry, the absence of which is esteemed so great rudeness as to approach very nearly to vice.

Should you decide at last that the relation between the sexes is one of equality—that dependance is reciprocal and equal, I shall not annoy you with my dissent, and if I change my opinion I will tell you.

United States Capitol.

I suppose a little description of the Capitol at Washington city will be pleasing to many of our young readers. In the first place there are ten miles square of land on the Potomac river, between Maryland and Virginia, called the District of Columbia. The laws for this district are made by Congress. In it are Washington and Georgetown on the Maryland side of the Potomac. Alexandria is on the opposite side, a few miles lower down the river.

The soil for a considerable distance round Washington is level and sterile; the farms large and badly cultivated.

The city is laid out curiously. Besides the usual plan of streets crossing each other at right angles, or squares, it has others streets called avenues running among these in several directions. Eight or nine of these go out from the capitol just as the spokes of a wagon wheel from the hub.

The Capitol stands on as high, or may be the highest ground in the city and occupies upwards of an acre and a half of ground. It is an enclosure of twenty-two acres, surrounded by plain iron railing.

The Capitol consists of a centre building with two wings. Conceive of a round room ninety-six feet in diameter, and upwards of a hundred and fifty feet high, and you will have a correct idea of the size and shape of the centre building or great Rotunda; next think of two houses on opposite sides of the Rotunda, but connected with it, each one hundred and

twenty feet square and seventy feet high; think of these three parts, each topped out with a dome, (inverted bowl) and lastly think of a splendid porch or portico, on the eastern and western fronts of the centre building supported by massy round columns of stone and you will have a general idea of the contour of the Capitol.

Of the two square buildings, or wings, that on the south contains the Hall of the Representatives, that on the north, the Senate Chamber. There are many committee rooms, and offices besides a library within the building.

The Representatives Hall which is said to be the finest apartment in the world, is semicircular, ninety-five feet in its greatest length and sixty high. The speaker's chair is in the middle of the straight side. Several feet from the wall, all around it, are columns of variegated Potomac marble. There are twenty-four of them, and they could scarcely be surpassed by any thing, either for beauty of material, or perfect workmanship. Over the speaker's chair is an American eagle in white marble, and above it a very large figure of Liberty. Opposite to this is a statue of History, seated in a winged car, rolling over a globe recording the events of the nation.

The Senate chamber is a smaller and plainer apartment; both are sky-lighted, ornamentally painted, and hung with crimson fringed drapery.

The Rotunda is a promenade; a great well ninety-six feet in diameter and upwards of one hundred and twenty deep. It is sky-lighted and is ornamented with sculpture, (raised or cut figures,) and painting, four of each. Pocahontas preserving the life of Capt. Smith, Penn's treaty with the Indians under the elm tree on Delaware, and the landing of the pilgrims at Plymouth, are sculpture.

The paintings are of scenes connected with the revolution. The room of the State House, Philadelphia, in which the Declaration of Independence was signed, is represented, with true likenesses of

nearly all the members at their seats. The committee appointed to draft a declaration, are on their feet before the chair of the president, presenting it by the hand of Jefferson, its author. The paintings are allowed by judges to be in fine style, and when another four are added to them, the decorations of the rotunda will be completed. If Col. Trumbull should be paid as well for the last four as he was for the first, then will the paintings in that one apartment cost the nation sixty-four thousand dollars. It is not to be understood that they paid every body so well who labored in building the capitol, though they did manage to make it cost several millions of dollars.

I will close this article with a published table of the general government expenditures during eleven years.

1822,	\$9,872,643 51
1823,	9,784,154 59
1824,	10,330,144 71
1825,	11,499,460 04
1826,	12,562,316 20
1827,	12,653,085 65
1828,	13,296,041 46
1829,	12,669,490 62
1830,	13,229,533 33
1831,	14,777,991 68
1832,	22,086,063 00

Pretty handsome annual bills, are they not?

Very Fine.

"If the time shall ever come when this mighty fabric shall totter—when the beacon of joy that now rises as a pillar of fire, a sign and wonder of the world, shall wax dim, the cause will be found in the ignorance of the people. If our union is still to continue to cheer the hopes and animate the effort of the oppressed of every nation; if our fields are to be untrod by the hirelings of despotism; if long days of blessedness are to attend our country in her career of glory; if you would have the sun continue to shed his unclouded rays upon the faces of freemen, then EDUCATE ALL THE CHILDREN IN THE LAND."

This alone startles the tyrant in his dreams of power, and rouses the slumbering energies of an oppressed people. It was intelligence that reared up the columns of national glory; and this alone can prevent them crumbling to ashes."

I have but one objection to the above, namely, that instead of urging us to improve our condition, it tacitly assumes that our condition is *good enough*, and that it should be our care to perpetuate it. I could say with the poet, "My soul is sick, my ear is pained" with the dreamings of enthusiastic patriots, and the impudent sophisms of wily politicians. So long as the latter, by tickling the ear with the sounds of "mighty fabric," "beacon of joy," "wonder of the world," and the like, can procure the former to play second fiddle for them, so long may they assure themselves that the interests of aristocracy are prospering. It were well ere it be too late, that the people of this country should examine the meaning of words; they will not then fail to discern when they are used unappropriately.

True it is, the "oppressed of other nations" do seek an asylum with us; but, as it may chance to be oppressed, or to oppress in their adopted country. Where are the oppressed of this favored land to go for redress of their grievances? Give us a paragraph in praise of the happiness of a life long spent in labors that go (all but a mere subsistence) to increase the capitol of the monopolies!

Tell us a tale of the "sun shedding his unclouded rays upon the face of (two million of slaves,) freemen!" Let us boast a little of our two hundred and fifty thousand children in Pennsylvania whose minds are unburdened by science and literature! Having done this and more, let us exult as we can, in view of these "majestic columns of national glory."

The natural advantages of this country are great, its policy is comparatively good, and we should not be impatient with our slow progress improvement ward; but when the idea is held up that we are a na-

tion of intelligent freemen, let us keep a sharp look out for the ignorance or inscience that inculcates it. He may be wise or honest who encourages us to advance; —he cannot be both, who speaks of us "as though we had already attained."

Acoustics

Is the science of sound. Where there is no air, sound is not perceivable. Elastic bodies only, can impart sound.

If you drop a small block on a tub of water, the liquid will be displaced under the block and be higher immediately in contact with it; this sudden swell will cause another swell, that another, and so on, and there will be a succession of concentric waves, becoming less as they approach the sides of the vessel. In the same manner that the block acts on the water, springy bodies act upon air. Their vibrations give to it wave-like motions, which are less perceptible in proportion as they are distant from the first vibration, until they are too weak to impart any motion to the next stratum of air. At this point no sound is heard.

It is easy to conceive, on this theory, how sound should be heard at a greater distance when it travels with, than when against a current of air.

When there is no wind, sound travels at the rate of 1152 feet in a second of time, or upwards of 785 miles an hour. Light travels much faster, hence, a distant motion which produces sound, (a man chopping wood for instance,) will be seen before the sound is heard. If he is at the proper distance, you will seem not to hear the first stroke you see, but then you will hear one after he ceases to strike.

Though loud sounds can be heard farther than low ones, yet at the distance it can be heard at all the sound of a whisper goes as soon as that of a cannon.

Sound, like light, is reflected. If it strikes a surface perpendicularly, it is reflected back in the same line it approached the reflecting surface; if it strikes obliquely, it is reflected off at the same angle. The reflection of sound is called Echo. By

the time which elapses between a stroke, or the articulation of a word and the return of the echo, a judgement may be formed of the distance. If it be one second from the time sound is made, until echo returns it, that which received and returned the sound, (the echoing surface,) must be one half of 1152 feet distant. It requires one half of the time for the sound to go out and the other half to return.

Anatomists say the structure of the ear is nicely accommodated for making the most of the vibrations.

To a beam or a plank of twenty or more feet in length if you apply your ear at one end while some one holds a watch at the other you will hear the watch distinctly. If the distant end be scratched with a pin very slightly it will be heard, and if the wood were substituted with glass the sound would be louder; if it were lead the contrary would be the case. Can you tell the reason?

The Eye.

Every person may become acquainted with the structure of this curious organ as it is easy to dissect it.

Remove an eye from its socket in a dead animal, a hog, calf or sheep. Be careful to cut the strong cord at the back of the eye as far back as you can. When you have the eye out, take hold of the cord, (the optic nerve) in your left hand in such way as will enable you to hold the eye steady; then taking a fine-edged, sharp-pointed pen-knife in your other hand, insert it a very little distance in front of the white of the eye. If you do not put the knife in too far, and pass it around at the same distance from the white, you will take off a circle or wheel of a transparent and exceedingly tough substance; this is the Cornea. While you are removing this a watery substance will pass off; this is the Aqueous humor of the eye. The next thing that occurs is the Iris. It is a very delicate membrane, skin or circular partition, which divides the aqueous from the other humors of

the eye. It can be removed whole by cutting cautiously around its circumference. It has a small round hole in the middle called the Pupil.

Immediately under the iris is situated the Chrystalline Lens, shaped like a burning glass but much thicker in the middle. It is of the consistence of hard jelly and is entirely transparent. It is called the Chrystalline humor. This lens is imbedded in the Vitreous humor, with its centre immediately behind the pupil.

The vitreous humor which constitutes the main mass of the eye, is also very transparent, and about the consistence of the white of eggs.

The whole substance of the eye is kept together by a tough coat or enclosure called the Sclerotica, to the hinder part of which is attached the Optic nerve connecting the eye with the brain.

Skilful dissectors find three coats over the eye. The Sclerotica, of which the Cornea is a portion, extending all around it. The Choroides of which the Iris is a part, and the Retina or black lining of the back part of the eye, over every part of which the optic nerve ramifies or spreads itself.

You have doubtless observed that the eye is moveable in its socket, so as to be turned at pleasure to take in the rays of light from surrounding objects, though you may not have taken notice that the pupil is smaller in very bright light than at other times; it is however a fact. This contraction and dilation of the pupil is most observable in the cat kind. Take a cat from a dark room in which it has been some time; the pupil of its eye will be large and round; hold the animal for a short time near, and in front of a lighted candle; you will observe the pupil contracting, which it will continue to do until it is a narrow, perpendicular stripe.

On going from a dark apartment into one brightly lighted, or into the sunshine when the ground is covered with snow, for a while a painful sensation is felt; or on going from either of these situations

into a scene where there is less light, the darkness will be more perceptible at first than after you have been in it some time. Both these are owing to contraction and dilation. It requires some time for the pupil to accommodate itself to a change from light to darkness and the contrary.

Some people have blue, some hazel and some black eyes. The different color of eyes depends solely on the Iris. All eyes are white around the edge, and all are black at the sight as it is called; the variety is only in the space between the white and black, which is in the Iris.

The shining black of the pupil is not in front; the cause of it lies at the back part of the organ. The Retina, jet black, is seen through the transparent and globular humors, as if it were at the surface.

Hydrostatics.

It is believed that the primitive particles of water are globular. One of the proofs that this is so, is that water dropped on a dusty table, on oil, or a cabbage leaf always assumes a globular form. Another is that a considerable quantity of sugar or salt may be dissolved in water, if a little be put in at time, without any increase in bulk. This may be continued until that which is put in falls to the bottom undissolved. After this the bulk will increase by all that is added.

You know if you were to fill a tub with cannon balls, there would be interstices or spaces between them. You may put in bullets; they will fill up those spaces, but as they will be in contact only in points, there will be smaller spaces between them. These may be filled with small shot which will leave small spaces that may be filled with water. The theory is that the water too, has its spaces which are occupied by the sugar or salt whose primitive particles are smaller than those of water. That they are smaller is evinced by the fact that it requires a closer vessel to prevent sweetened water or brine from leaking out than would be necessary to

hold the water if it contained neither of those substances.

The globular form of the particles of liquids together with the great smoothness of their surfaces, causes them to slide over each other readily. This, with the tendency that each particle has to gravitate, independently of all the other particles, may be assigned as the cause why liquids find their level. If you pour water into a very large tea-kettle, through a very small spout, the water in the kettle will at all times be on a level with the water in the spout.

This would not be so if the particles of liquids were in columns directly over each other. This is not their relative position. So arranged they would not occupy the least space into which they could be put. Their position is probably one between two from the bottom to the top of a vessel containing a liquid. If this is their position it is easy to conceive that all the particles except those on the top will press out sideways; the upper layers acting in the manner of a wedge on those immediately below.

The independent tendency that each particle has to the bottom of the vessel, is called the perpendicular pressure. That tendency which each layer acquires (from the downward and wedging pressure of those above,) to go sideways, is called the lateral pressure. This, if there were no resistance, might cause a liquid to spread itself until there would not be one layer of particles above another.

The sea shore banks of streams and sides of vessels do resist, and hence liquids can be piled to great height.

Think of a hogshead open at one end and partly filled with water; conceive of a small tube of the thickness of a goose quill, through which a stream passes down on the middle of its surface. The perpendicular pressure of this stream will produce lateral pressure in the upper layer, and increase it in all the others; the consequence will be that the liquid will crowd upwards at the sides of the vessel as well as over the whole surface. This

is lateral pressure causing upward pressure.

Now imagine the vessel filled, a head in it, with a hole in the centre, into which the same tube is inserted, and ask yourselves what will be the consequence if water be poured into the tube.

There is a thing called the Hydrostatic Bellows, in shape like a hogshead, but instead of hoops and staves the sides are made of leather—a leather band nailed closely around both the heads or ends. The leather being pliable the heads may be brought close together, or removed the width of the band from each other. This article of philosophical apparatus is water and air tight, except a hole in one of the heads into which a tube is inserted. If the heads are brought near together and water be poured down, they will be forced apart with a power proportioned to the size of the heads and the height of the tube. The larger the heads or the longer the tube, the greater will be the upward pressure.

We have a hydrostatic bellows in our school with heads about a foot in diameter and a tube of seven feet long. By pouring water into the tube until it is full, we can raise two men of common size who stand on the top of the bellows. If the tube were fourteen feet long, we could raise four men, although the tube and the water in it would not weigh two pounds. Here is a case where two pounds of perpendicular pressure produce a sufficiency of lateral, to cause six hundred pounds of upward pressure.

The upward pressure of the hydrostatic bellows seems very strange to some people; if you reflect duly upon downward and lateral pressure, I think you will be able to account for the upward. You will find it equal in all cases to a column of water of the same diameter as the bellows and of the height of the tube. The thickness of the tube has nothing to do with the amount of effect; the smallest one that water can run through will do as well as one half the diameter of the bellows, for the same reason that

you can fill the tea-kettle as well through the spout, as at the top: the only difference is, that it will require longer in both cases.

Take three vessels each a foot high with bottoms a foot in diameter, let one of them be of equal diameter at both ends; one six inches in diameter at the top, the other eighteen inches; though the three vessels if filled with water will weigh very differently, yet the pressure of the liquid on their bottoms is equal. Try if you can explain this to yourselves, after what has been said.

Volcanoes.

Bishop Berkley of England visited the burning mountain of Vesuvius in 1717. He went to the top of the mountain and took a view of the terrible pit. He thought the crater, (the hole at the top,) was a mile in circumference, and the pit a hundred yards deep.

He ascended the mountain twice and says the appearance at the bottom changed very much during the month which elapsed between his visits.

There were two great furnaces of liquid fire, which, while he was looking at them, threw up large masses of red hot minerals several hundred feet higher than where he stood. These stones fell perpendicularly back again, and formed a little hill in the middle of the pit.

About one month after he was there the last time, the lava worked over and continued to do so for some time. Its overflowing caused torrents of melted minerals to descend down the sides of the mountain, which bore down and burnt up trees houses and every thing in its way. He speaks of one stream of lava which he supposes was half a mile wide and five miles long. There were many smaller ones running wherever they could find a channel. From these streams there issued constantly a suffocating vapor of sulphur hy which our traveller was once very nearly destroyed.

He says that as he stood on the crater's edge he heard an incessant hissing and bubbling below, and could see the

liquid mass rolling and foaming like waves.

While the mountain was overflowing its roarings were terrible, and he heard them at Naples, twelve miles distant. It was a mixed sound apparently made up of the blowing of a tempest, the rushing of waters, the rolling of thunder and firing of cannon.

The houses in Naples were severely shaken.

It was about two months from the time he first ascended the mountain until it had disgorged its liquid contents, and all was quiet.

COMMUNICATIONS.

On the Decomposition of Vegetables.

Vegetables are more easily decomposed, or undergo chemical changes more readily, because their composition is more complicated, and of course they must have a greater variety of attractions and the greater the variety of attractions, the more easily the equilibrium is destroyed.

That process which disunites and decomposes the elements of vegetables is called fermentation, of which there are four kinds.

The first is called the saccharine fermentation, because it produces sugar.

The second is the vinous which produces wine and in which the sugar is decomposed and its constituents recombined into two new substances, the one is alcohol, which remains in the fluid, and the other is carbonic acid gas, which escapes during the fermentation; and if the fermentation be stopped by putting into barrels before the whole of the carbonic acid is evolved the wine will be brisk like champagne and sweet like cider, from the sugar not being completely decomposed. Wipe is a liquid of which alcohol constitutes the essential part, and the variety of strength and flavor of the different kinds is to be attributed to the different qualities of the different fruits from which they are obtained. Brandy may be obtained from wine by distillation as it is nothing more

than a mixture of alcohol with water, and is colorless in its pure state, while that which we see is of a red color, it is so colored with a little burnt sugar, to give it the appearance of having been kept long. Alcohol may be obtained from brandy by distilling it several times. It is the intoxicating principle in all spirituous liquors. The different kinds of odoriferous, spirituous waters are solutions of volatile oils and alcohol. Some of the peculiar uses of alcohol is in dissolving a variety of substances, that are soluble neither by heat or water. It consists principally of hydrogen with a small quantity of carbonic acid and oxygen; if there be a certain portion of carbonic acid subtracted from it, it forms ether, which is the lightest and most inflammable of all fluids.

The process of the vinous fermentation may be expressed in a few words, as it consists in the conversion of sugar and other fermentable bodies into alcohol and carbonic acid gas which gives rise both to the formation of wine and all kinds of spirituous liquors.

The third fermentation is called the acetous, because it converts wine into vinegar, by the formation of the acetous acid, which is the basis of vinegar. Contact with air is essential to this fermentation, as it affords it the necessary supply of oxygen. It is found by experience, that any substance that has undergone a fermentation will readily excite it in one that is susceptible of that process; if for instance you mix a little vinegar with wine or cider, it will absorb oxygen more rapidly and the process be completed much sooner than if left to ferment spontaneously. The fourth is the putrefactive fermentation, and is the last operation of nature; and her last step towards reducing organized bodies to their simplest combination.

There are substances which are called petrified vegetables, they consist chiefly of silex. This is the case when vegetables are buried under water or in wet earth, where the vegetable is slowly and gradually decomposed, and as each suc-

cessive particle of the vegetable is destroyed, it is supplied by a particle of silicious earth, and in the course of time the vegetable is entirely destroyed, but the silex has completely replaced it, and it appears as though the vegetable was changed to stone; there are also circumstances which frequently prevent the final decomposition of vegetables; as for instance when they are either buried under the sea or in the earth where they cannot undergo the putrid fermentation for want of air; in these cases they undergo a change by which they are converted into a class of compounds called bitumens. bitumens are vegetables so far decomposed as to retain no organic appearances; they are sometimes of a liquid consistence as naphtha, but they are more frequently solid, as asphaltum and jet. Coal is a bituminous substance, it consists chiefly of vegetable matter mixed with the remains of animals and plants, and occasionally a quantity of sulphuret of iron.

C. M.

Water.

In many a bright and dazzling form
Is the clear and silvery liquid seen,
It forms a part of the winter storm
And clothes the bough in an icy sheen.

In spring its course is over the sea,
In summer it shines in the lily's cup,
In autumn it gems the rose on the lea
And in winter 'tis white on the cedar top.

O'er the ocean in sparkling foam it strays
In the river in dimpling eddies it curls,
In the streamlet over the pebbles it paly
And in cataract over the precipice whirls.

'Tis water that forms the fading bow
Of many hues in the summer sky,
And it forms the shadows that come and go
That are seen when the snowy clouds
float by. F. F.

SELECTIONS.

The Shetland Pony.

"What stupid animals those tame horses are, to bear such heavy burdens and

work so many hours!" said a wild Shetland pony, as he watched the labours of the horses of a Shetland farmer, who were employed in carrying loads of turf.

Brownv, for so the wild colt was called, peeped his rough head over the fence, and amused himself by observing what passed among his more industrious brethren. He examined, with much attention, the various parts of the harness the horses wore—the bridle, the halter, and above all, he was most pleased with their bright iron shoes. He could not refrain from asking a number of questions; to which the horses replied with much good temper. "What are those pretty bright things that you wear on your feet?" asked Brownv.

"They are our shoes," answered one of the horses. "And how came you by them?" demanded the pony.

"They were put on by our master, to prevent our feet from being wounded by the rough stones and hard ground we are forced sometimes to travel over," replied the horse. "Then," said the simple pony, forgetting how much he had despised the laboring horses a few minutes before, "I should like to wear such pretty shoes. Will you give me one of yours?"

"They are nailed on our feet and we can by no means remove them," said the horse.

"And pray, what is the use of that bright chain that you hold between your teeth, and that piece of leather which comes over your head and neck?"

The horse told the pony that the bright shining chain was a curb, and the long piece of leather was a bridle; by which they were restrained from going any way but that which their master chose. "We are forced," said they, "to work many hours in the day, and in all weathers; and if we are unruly, or do not perform our duty according to our master's wishes, he never fails to chastise us with a long whip; but then, in return for our services, we are lodged in a warm sheltered stable or shed all the cold weather, and are fed

with sweet hay, or corn, or grass; and when the frost is sharp and the ground covered with snow, we have little to do and live at our ease."

"For all this," replied Brownv, "I would rather enjoy my liberty, and be able to range over hill and plain with scanty fare, than be well fed, and subject to the will and caprice of a master, as you are. I am free, and will never submit to be curbed by any one," and shaking his mane, he bounded over the heath, and joined the wild ponies his companions, exulting in his liberty.

The winter set in that year with uncommon severity; the snow fell for many weeks without ceasing; the mountain streams were fast bound up by the frost; the shrill north wind blew keenly over the desolate plains, which afforded not a single blade of grass, nor a bit of moss nor heath, for the support of the wild ponies and cattle; who, forced by want, came into the enclosures, and round the dwellings of the Shetlanders, for shelter from the inclement season. Even the proud spirit of Brownv was tamed, and urged by hunger, he entered the yard of a Shetland farmer to seek for food.

His fleet step, fine form, and fiery eye, did not pass unnoticed by the Shetlander, who resolved, if possible, to make himself master of so spirited an animal; but Brownv, as if aware of his design, bounded away whenever he drew near the spot where he stood. But the weather increased in coldness, and Brownv felt the want of food every day more severely.

One day the Shetlander who had for sometime marked his hungry and dejected looks, approached the spot where he was with a basket of corn in his hand, which he placed on the ground before him, and withdrew to a little distance that he might eat it undisturbed. For several successive days the Shetlander repeated his visit; and Brownv, grown more familiar and grateful for the supply of food, at length suffered the farmer to approach him, to pat his rough side and shaggy mane; and the sound of his steps on the

frozen and was heard and gladly welcomed by the Shetland pony, who ran neighing to meet his friend, eager to receive his daily supply of food from his hands.

But one day while Brownny was eating his provender, the farmer watching a favorable moment, threw over his head a noosed rope, and in spite of his anger, and the resistance he made, led him away captive to the stable, where he remained for a long time sullen and unhappy, regretting the loss of that liberty which, in spite of cold and famine, he still held so dear.

Brownny by degrees grew more gentle, and soon became sensible of the kind treatment he received from his new master, who trimmed his hoofs and mane, and combed and brushed his rough coat till it looked quite fine and shone like satin. He came daily to feed him, and brought his little children to admire the young stranger, who patted his sides with their little hands, and praised the beauty of his form and his bright eyes.

When the spring returned, and the beams had melted all the snow from the ground, Brownny was led from the stable, bridled and saddled, his feet shod with the bright shoes he had admired so much. Without making any resistance, he suffered himself to be mounted and galloped lightly over the level turf; while his master, delighted by his gentleness, caressed him, and praised his fleet step and graceful motion.

From this time Brownny became a general favorite: he was the darling and pet of all the farmer's children, who never beat or kicked him, but plucked for him the sweetest grass, and brought him the clearest water from the spring to drink; and the grateful pony, no longer wild and unruly, would suffer them to mount his back and carry them safely round the fields and common. In short, Brownny was so happy, and treated with such kindness, that he never had reason to regret the day when he was deprived of his

freedom and became subject to the will of the good Shetlander, his master.

No fable is really good, for any thing except for the moral it inculcates. In the one you have just read, if we think of it only in its application to horses and other irrational creatures, we may decide that the supply of wants is cheap enough at the price of dependance. The faculties of brutes may become as perfect, and their enjoyments as great in a state of subordination as in one of entire freedom; we do not know that dependance is painful or depressing to them.

If the tale was written with any meaning, it was to reconcile men, and not horses, to slavery. This alters the case. The human mind cannot expand to its full dimensions, human enjoyments cannot be complete when there is a sense of unequal dependance. We may indeed relieve ourselves from physical pain as "Brownny" did, by placing ourselves under the protection and guidance of others. Some are necessitated to do so or starve; the wants of their physical nature are imperious and must be supplied, but I should like all who read this to reflect upon what it costs them, not for the purpose of deciding that they should not be a party to such conditions, but that they may be induced to consider whether a system might not be devised in which no such conditions would be offered; whether society could not be so organized by common consent that no one would be obliged to give his personal or mental liberty for bread. I think it could, and that if every member of society were as enlightened as all ought to be, it is a price that would never be asked.

I hope there are those among the readers of the Inciter who will not only cultivate in themselves the spirit of independence, but cherish and encourage it in others.

As no man could have the skill to supply himself with every thing he needs in

civilized life, there would be a mutual dependance among fellow beings, if the state of knowledge and finances were equal in all; this kind of dependance is good for us; it binds us together by our common wants; it improves fraternal feeling, and places us in that relation to each other without which we could not realize social feeling; but the dependance which is not nearly equal, has the direct tendency to prevent its growth, nay to destroy it in the very germ.—Ed.

THE NAMES OF THE MONTHS.—These came to us from the Romans. January from Janus, an ancient King of Italy; February from the word Februo, to purify; March from Mars, June from Juno; July and August were so named in honor of Julius and Augustus Caesar.—Before the time of Julius Cæsar, these months were called Quintillis and Sextillis, being the fifth and sixth months, reckoning as the Romans did at that time, from March at the commencement of the year. September, October, November and December, signifying the 7th, 8th, 9th and 10th months from March when the year began.

Insect Sagacity.

The banbul tree affords a curious specimen of insect sagacity, in the caterpillars' nests suspended by thousands from the branches. This little animal, conscious of its approaching change, and the necessity of security in its helpless state as a chrysalis, instinctively provides itself with a strong mansion during that metamorphosis. As a caterpillar is it furnished with very strong teeth, with them it saws off a number of thorns, the shortest about an inch long, and glues them together in a conical form, the points of all tending to one direction, the extremity terminating with the longest and sharpest. This habitat is composed of about twenty thorns, for the exterior, lined with a coat of silk, similar to the cone of the silk-worm, suspended to tree by a strong ligament of the same material. In this asylum the banbul caterpillar retires to

its long repose; and armed with such formidable weapons, bids defiance to birds, beasts and serpents, which might otherwise devour it.

✂ The present No. completes a volume, and in it we ask to be excused for editorial defects—typographical errors and above all for the quality of the paper. The inferiority of the article was not discovered until it was too late to obviate it; this was our situation from previous disappointment. We will be more provident in future and should the work go on, the next volume shall make a better appearance. It will differ also from the present, in having a greater proportion of selected matter.

✂ Thus far there has not been sufficient promise of support to warrant an engagement to continue the publication.

✂ Those who wish to promote the publication, can address letters as heretofore, to the editor in this city free of postage, until the last of March, after which he will not be here to receive them.

✂ Publishers with whom we exchange, will continue to send their periodicals here until the latter part of March, after which date they will please retain our files until they hear from us.

✂ We struck off as many copies of the Inciter as would defray the expense of publication, should they sell. We have complete files on hand, of which we will give eleven copies for ten dollars. This may accommodate schools.

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All letters must be post-paid, otherwise they will not be taken out of the Post office.

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I wish our readers as much profit in the perusal as I have had in the collation.

A. GILBERT.

